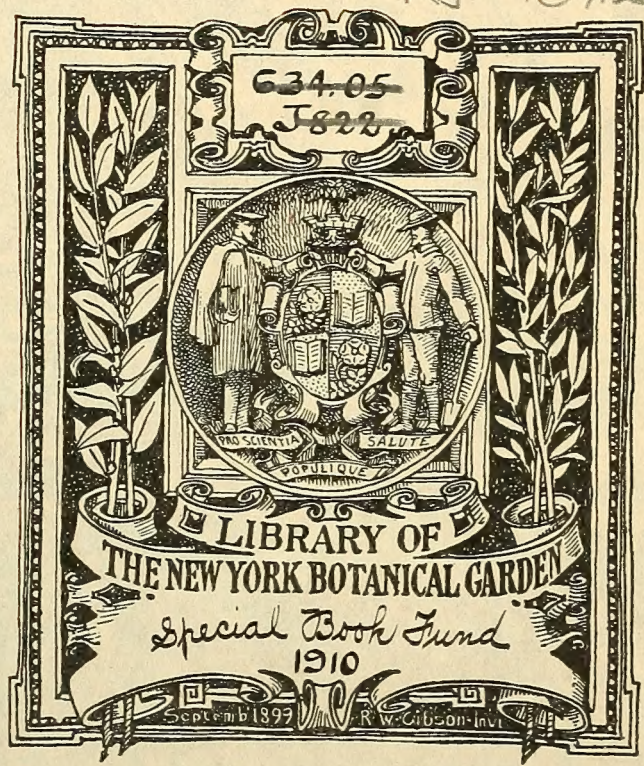


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THE
JOURNAL OF HORTICULTURE,
COTTAGE GARDENER,
AND
COUNTRY GENTLEMAN.

A CHRONICLE OF THE HOMESTEAD, POULTRY-YARD, APIARY, & DOVECOTE.

CONDUCTED BY

GEORGE W. JOHNSON, F.R.H.S., AND ROBERT HOGG, LL.D.

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TO OUR READERS.

x

[SCENE.—A room in Fleet Street; two library tables, fireplace between them. On the hearthrug before that fireplace the SPIRIT OF THE JOURNAL OF HORTICULTURE, frowning as darkly as that benign Spirit can frown.]

THE SPIRIT soliloquises :—

“There is no merit in being old, as all my female friends long since concluded. If there were any such merit, then would I inconvenience one who says that he is my senior. I am two centuries and a half of weeks more aged than he. Let that pass, and let the palm be given to the best.

“Another year has concluded, another of my volumes is completed; and I ask from all my friends that heart-gladdening praise now before me—‘You have been useful to many thousands.’

“Let me look to future days. Another year has commenced, and not one of my ministering spirits has been taken from me. The same minds, and hearts, and hands uphold me; but others have come to my sustaining, and each pen and each pencil will, as heretofore, strive to impart genial light without a needless shadow on the leaves of my future days.

“Those leaves will be welcomed, as they have been, in each of the earth’s five divisions: for those leaves have for many years gladdened hearts in the islands of Oceania; and re-echoed from Asia, America, and Africa has been this sentence from Australia—‘We are taught by your pages, we welcome them as old-trusty friends; and my wife leans over me as I read, and half-sobs out, “Doesn’t *that* remind you of our old home?”’ May those readers—may all readers of my leaves—remain; and I will journey on sustained by their approbation, praying that they may seek for information from those leaves, promising that it shall be obtained from the best authorities, that it shall be imparted kindly, that only the dishonest shall call forth severity; and I trust, when another year is closed, the same and other friends will again write, ‘You have been useful to thousands,’ for that grateful comment will again sustain and invoke, as it has now, THE SPIRIT OF THE JOURNAL OF HORTICULTURE.”

THE LEADERS

The first thing I noticed when I stepped out of the car was the cold, crisp air. It was a relief after the warm, stuffy interior. I looked around, trying to get my bearings. The street was wide and empty, with a few distant lights visible in the night.

I walked slowly, my feet sinking into the soft ground. The silence was broken only by the occasional rustle of leaves or the distant hum of a car. I felt a sense of isolation, as if I were the only person in the world. The darkness seemed to envelop me, and I could feel my breath fogging in the cold air.

As I continued my journey, I began to notice the texture of the ground beneath my feet. It was uneven, with small rocks and patches of moss. The air grew colder, and I could feel my body beginning to shiver. I tried to focus on my steps, but my mind wandered to the unknown ahead.

The path I was on seemed to lead nowhere, a dead end in the darkness. I stopped for a moment, looking back over my shoulder. The way I had come was now lost to me, and I was alone in the vast, dark expanse. A small, distant light caught my eye, and I felt a flicker of hope.

I followed the light, my heart pounding in my chest. The path led me through a dense thicket of trees, their branches reaching out like skeletal fingers. The light grew brighter, and I could see the source of the glow. It was a small, flickering fire, and I felt a sense of relief. I walked towards it, my steps growing more confident. The darkness seemed to retreat as I approached the light, and I felt a warmth that I had never experienced before.

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WEEKLY CALENDAR.

Day of Month	Day of Week	JULY 4-10, 1872.	Average Temperature near London.			Rain in 43 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
4	Th	South Notts Horticultural Society's Show. PRINCESS HELENA MARRIED.	76.1	50.2	63.2	15	52 af 3	15 af 8	29 af 2	42 af 7	28	4 8	186
5	F		77.1	50.2	63.7	17	53 3	14 8	12 3	32 8	●	4 18	187
6	S	6 SUNDAY AFTER TRINITY.	76.0	50.8	63.4	19	54 3	14 8	3 4	14 9	1	4 29	188
7	S		73.7	50.8	62.2	22	55 3	13 8	4 5	47 9	2	4 38	189
8	M	Royal Botanic Society's Show opens.	74.0	50.0	62.0	20	56 3	13 8	9 6	12 10	3	4 48	190
9	Tu		74.1	49.4	61.8	18	57 3	12 8	19 7	32 10	4	4 57	191
10	W		74.7	50.3	62.5	16	58 3	12 8	29 8	50 10	5	5 5	192

From observations taken near London during forty-three years, the average day temperature of the week is 75.1°; and its night temperature 50.2° The greatest heat was 97°, on the 5th, 1852; and the lowest cold 33°, on the 9th, 1863. The greatest fall of rain was 1.10 inch.

THE EFFECT OF COPING-BOARDS ON PEACH TREES.

IS it the uncertain and changeable nature of our climate that causes most communications about fruit-culture on open walls to possess a certain vague and undecided tone? It must be so, and yet I hardly know why, unless it is that instances of successful culture are few and far between. By successful culture I do not mean a fitful event, but a steady, progressive, and almost certain process, which, by its soundness and practicability, enables one in most seasons to obtain a crop of fruit. It may be well to inquire, when failures do occur, if due allowance is made for the evil effects which overcropping has upon the stamina of a fruit tree; for I am by no means certain that many a failure of trees, apparently healthy enough, does not result from a variety of causes apart from that of an ungenial spring. When a tree of moderate vigour is allowed for one season to carry such a heavy crop of fruit as to become one of those pomological marvels but too often displayed with an air of triumph, its strength is so much exhausted, and its constitution so severely tried, that weakly growth and falling blossom almost inevitably follow.

The old well-known plan of coping-boards has the important merit of economy to recommend it, in addition to the thorough protection it affords to foliage as well as blossom in all ordinary seasons. I have had ample proof of the value of this plan for several years, and in the present trying season it has protected trees so admirably that the work of fruit-thinning has been an arduous though pleasing task to those having charge of them. The boards used in this instance were 15 inches wide, and of a proportionate thickness; they are securely bolted to iron brackets, and are regarded as a fixture, being kept in position throughout the year. It was customary at one time to suspend a screen of fine netting from the outer edge of the boards as a protection for the trees in spring, but this has been discontinued of late as entirely unnecessary. Now, the garden where this plan is practised so successfully is no favoured spot, screened from the inclemency of winter, but is so much exposed that it is no rare thing for the whole of the winter vegetables to be destroyed by frost, so it is reasonable to suppose that this simple and efficient means of protection is applicable to all gardens in the south of England.

In my advocacy of coping-boards I would by no means ignore the great value of the orchard house and glass casing; these are costly yet most desirable structures which all gardeners would like to have, but lacking these, it is well that no good and useful means of shelter should be lost sight of.

An opaque coping, whether of wood or other material, must, when it is a fixture, be regarded as something more than a mere protector, for it has a decided and marked effect upon the growth, and I will venture to say the health and longevity, of the Peach and Nectarine, as well as

upon the productiveness of all the varieties of those fruits to which I have seen it applied. A coping that projects 15 inches at right angles from the top of a wall will very slightly shade a few inches of the part immediately beneath; this acts as a check upon the tendency to excessive vigour in the highest branches, common to all trees; thus the sap is more evenly distributed; the growth near the base of the tree, instead of becoming bare and old, is constantly renewed; and, consequently, fruit is so freely produced that there is no wasted space in any part of the tree. With a good soil, attention in pruning, in keeping the foliage and growth clean and healthy, in avoiding the slightest tendency to overcropping—in a word, with all the advantages of high culture steadily applied, the trees will continue in a flourishing condition for a much longer period than when left quite unsheltered. I do not, of course, pretend to assert that a coping of itself will keep a tree healthy, that is a matter depending very much upon the cultural skill and attention bestowed upon it, not for a time, but constantly, year by year. I lay some stress upon this, because I have seen trees driven into excessive vigour by one man, and reduced to the opposite extreme by another; to the subjects of such treatment these notes do not apply, for the stamina of a tree suffers as much from excess or disease as the human frame, and therefore, unless it has the constant advantage of skilful culture from the time it attains the dignity of a trained tree, it cannot fairly be expected to continue fruitful, or even to exist at all, so long as I have represented.

As an example of the wonderful longevity and fruitfulness of the Peach, I may instance a fine old tree that I saw a month or two ago. This tree is probably thirty years old, perhaps more, for I can remember having had to train its branches nearly twenty years ago, and it was then considered an old tree; yet there it stands now, its free growth well clothed with healthy foliage, and laden with an abundant crop of fruit, which it will undoubtedly bring to full maturity. But what is so remarkable about this tree is the fact of its stem—a yard high—being perfectly hollow, so that we have here a mere shell continuing to grow and produce fruit in greater perfection than is often seen in younger and more vigorous trees.—EDWARD LUCKHURST.

ODONTOGLOSSUM (CRISPUM) BLUNTII.

How pleasing it is to see this magnificent cool-house Orchid becoming so extensively cultivated. I can but endorse the remarks so often made, that it should be grown by the dozen—nay, where space permits, by the hundred—for when three or four dozen spikes are seen in bloom in a mass we cannot, I think, mention one species of Orchid, whether grown in a hot, intermediate, or cool house, that can surpass, if equal, it for effect. Large masses of *Cattleya Mossiæ*, *Oncidium macranthum*, or the lovely *Disa grandiflora* are each and all extremely beautiful, yet they are wanting in that gracefulness and delicacy which impart so much to the beauty of *Odontoglossum Bluntii*.

Seeing masses of this *Odontoglossum* in bloom it may,

perhaps, by some be thought merely an imagination of my own, but at the present time (June 11th) about three dozen spikes are fully expanded in the *Odontoglossum* house at Ferniehurst, and their number increases every day. Many of these bear ten, twelve, or more flowers, while the greater part of the individual blooms measure from 4 to 5 inches across. The pseudobulbs from which they are produced vary from 3 to 6 inches in circumference. The appearance of the mass, intermingled with several blooms of *Masdevallia Harryana*, may be better imagined than described, bearing in mind that it is only those who possess it in large quantities who can enjoy the pleasure of such a sight.

A section of the structure in which these plants are grown was given by you early in the year (vol. xxii., page 100), so that I need not comment on it here; but by way of helping those who are about to commence, or have hitherto failed to succeed in their cultivation, I will add a few cultural hints. In the first place it is highly important to devote a house entirely to this and other *Odontoglossum* from the cool regions, for, when mixed with the inmates of the intermediate house, failure is almost certain; they may, perhaps, do well for a time, but they will not maintain the same vigour as they will do when grown in the cooler house. If this is the case, why not adopt the practice of so growing them, seeing that the expense would be much less than in cultivating them in warmer structures, and expense is a matter of the greatest importance to many of our amateurs?

With regard to the potting materials, nothing can be better than good fibrous peat, small-broken crocks, chopped sphagnum, and an admixture of silver sand, or, equally good, river or well-washed road sand. A little leaf mould may be added with advantage, and providing the plants are in good health, a small quantity of sweet horse droppings, such as may be obtained from an old Mushroom-bed, will be found very beneficial.

The pots to be used should be scrupulously clean and well drained; after the potting is finished, be sure that the plant is made firm, if a little living sphagnum moss is placed on the surface it will give the whole a very pleasing appearance. Nothing now remains but air and moisture; it is well known that *Odontoglossum* delight in abundance of moisture, both at the roots and in the atmosphere; therefore, when watering, care should be taken to give enough to moisten the whole of the compost. On no account practise the dribbling system, for this, doubtless, in many instances leads to failure. Atmospheric moisture should at all times be maintained, but by no means anything like condensed moisture. This can easily be guarded against by admitting a free circulation of air—that is, as free as the external temperature will permit, not only by day but by night, avoiding cold draughts by placing a layer of tiffany over the openings through which the air passes.

Let it be understood that this treatment not only applies to *O. Bluntii* (Alexandria), but to the majority of *Odontoglossum*, as well as that glorious *Oncidium* *O. macranthum*, about which I shall probably send a note in a few weeks.

These cultural remarks may seem very simple, but the simplest method often proves most successful, and I am confident such will be the case with the *Odontoglossum* where the above treatment is carried out. What we want to see is healthy plants with leaves perfect to the points.—C. J. WHITE.

ROYAL HORTICULTURAL SOCIETY.

JULY 3RD.

THE Rose Show held this day, if not quite so extensive as some at Kensington, was marked by an excellence we have never before witnessed. Throughout the Exhibition there was scarcely a bad truss, and in brightness and freshness, and even in size, nothing more could be desired. It was no disgrace to be beaten at such an Exhibition, for there were stands placed third which would easily have been first at many other large shows. The day was fine, the attendance good, and the amalgamated National and Royal Horticultural Rose Show a decided success.

In Class 1, for seventy-two single trusses, Messrs. Paul & Son, Cheshunt, were equal first with, among others, splendid examples of Comtesse de Chabrillant, Général Jacqueminot, Horace Vernet, Charles Lefebvre, Louis Van Houtte, Annie Wood, Duke of Edinburgh, Madame Vidot, Duchesse d'Orléans, Alfred Colomb, Maurice Bernardin, Marquise de Castellane, Monsieur Boncenne, Duc de Rohan, Leopold Hausburg, Xavier Olibo, Sénateur Vaisse, Mrs. George Paul, Baronne Hausmann, Marie Baumann, Queen Victoria, and Baroness Rothschild. Mr. B. R. Cant, of Colchester, who was equal first with Messrs. Paul, had splendid trusses of Mrs. Rivers, Comtesse de Chabrillant,

Felix Genero, Mdle. Annie Wood (very fine), Antoine Ducher, Maréchal Vaillant, Mdle. Marie Rady, Alfred Colomb, Devoniensis, Madame Boll, Marie Baumann, Baroness Rothschild, Victor Verdier, Comtesse d'Oxford, François Louvat, Comtesse de Paris and many more. Two finer collections than these we have never seen staged. Mr. Turner, of Slough, was second with an excellent set. Mr. Keynes, of Salisbury, was third, also with a fine stand. Mr. Mitchell, Piltown Nurseries, Uckfield, also exhibited stands containing many very fine trusses; and Messrs. Francis & Co., Hertford, sent a good seventy-two. The fourth prize went to Mr. Cranston, of Hereford. Messrs. Veitch likewise competed. From the number of exhibitors, all good men and true, it will readily be conceived that the competition was very keen. Never, perhaps, have so many excellent stands of seventy-two been set up at Kensington, and though all the trusses were not superexcellent, there were none bad.

In the next class, three trusses of forty-eight varieties, there was again a grand display, Mr. Keynes being first; Mr. Cant second; Mr. Turner, Slough, third; and Messrs. Paul & Son fourth. This class always has a fine effect from its presenting such masses of colours. Of the varieties best represented we may name Marquise de Mortemart, Madame Vidot, John Hopper, Victor Verdier, Prince Camille de Rohan, Centifolia rosea, Duc de Rohan, Mdle. Eugénie Verdier, Louis Van Houtte, Comtesse d'Oxford, extremely fine; Louise de Savoie, Charles Lefebvre. In Mr. Cant's forty-eight were splendid trusses of Marie Baumann, Charles Lefebvre, Souvenir de Coulommier, Duke of Edinburgh, Dr. Andry, Beauty of Waltham, Rubens, and Madame Noman, delicately beautiful. Messrs. Francis, of Hertford, also sent an excellent forty-eight.

In Class 3, twenty-four trebles, the prizes went to Mr. Cant, Mr. Keynes, Messrs. Veitch, and Messrs. Paul & Son, in the order in which their names occur. Xavier Olibo, Duke of Cambridge, Marquise de Mortemart, La France, Ferdinand de Lesseps, Victor Verdier, Fisher Holmes, Duke of Edinburgh, Beauty of Waltham, Baroness Rothschild, Marie Baumann, Mdle. Marie Rady, Marguerite de St. Amand, Abel Grand, La Brillante, and Horace Vernet were strikingly fine. Mr. J. Cranston, Mr. Turner, and Mr. Mitchell also exhibited.

Class 4 was for twenty-four single trusses; in this Mr. Cant was first, Messrs. Veitch second, Mr. Cranston third, and Mr. Turner fourth. There were grand trusses of Marquise de Castellane, Comtesse d'Oxford, Devoniensis, Alfred Colomb, La France, Mdle. Marie Rady, Baroness Rothschild, Duke of Edinburgh, Marguerite de St. Amand, Marie Baumann, and many others. The other exhibitors were Mr. Walker, Thame, Mr. Keynes, and Mr. Mitchell.

In the amateurs' class for forty-eight, Mr. Ingle took the place of honour with an excellent stand, in which Exposition de Brie, Pierre Notting, Souvenir de Coulommier, Charles Lefebvre, Baroness Rothschild, and Duc de Rohan were conspicuous. T. Laxton, Esq., Stamford, was second; Mr. Bridges third; and Mr. Chard, gardener to Sir F. Bathurst, Bart., Clarendon Park, Salisbury, fourth.

In thirty-sixes there was an excellent competition, and some superb blooms were shown. The prizes went to J. Hollingworth, Esq., of Maidstone; Mr. Stoddart, gardener to H. J. G. Rebow, Esq., Wivenhoe Park; Rev. J. B. M. Camm, and Mr. Chard. For twenty-four, Mr. P. Stoddart was first, Mr. F. May second; R. B. Postans, Esq., Brentwood, and Mr. Hollingworth were equal third; and Mr. J. Skinner, gardener to Capt. Christy, Westerham Hill, fourth. An excellent twelve from Mr. John Wakeley, Upchurch, Kent, was first, the remaining awards going to Mr. Soder, gardener to O. Hanbury, Esq., Howe Hatch, Mr. Skinner, and Mr. F. May.

For twelve Roses of 1870 or 1871 Messrs. Paul & Son took the first place with several promising seedlings; Miss Poole, Princess Christine, S. Reynolds Hole, a fine dark Rose, Etienne Levet, Princess Louise Victoria, W. Wilson Saunders, fine, Henri Pages, and Lyonnaise. The second prize went to Mr. Keynes; Comtesse de Nadaillac, Henri Pages, and Capitaine Lamure were the most striking.

For twelve trusses of any Rose of 1870 or 1871 Messrs. Paul and Son had a prize for Annie Laxton, a fine bright rose, also taking for it a first-class certificate. Mr. Cant sent a very fine stand of Comtesse d'Oxford. In the corresponding class for six trusses there were fine examples of Marquise de Castellane, Ferdinand de Lesseps, and Mdle. Eugénie Verdier.

Of yellow Roses there were several remarkably fine collections. Messrs. Paul & Son were first with a rich-coloured box of Céline Forestier and Madame Margottin, together with Madame Falcot, Gloire de Dijon, and Rêve d'Or. Second came Mr. Stoddart, and third Mr. Keynes. Belle Lyonnaise from the last-named was extremely fine.

Tea-scented and Noisette Roses formed a little show of themselves; Céline Forestier, Triomphe de Rennes, Niphotos, La Boule d'Or, Souvenir d'un Ami, Madame Falcot, Gloire de Dijon, Adam, Belle Lyonnaise, Moiret, and Niphotos were represented by beautiful examples in several stands. Maréchal Niel, however, was not so fine as usual.

In the amateurs' class the prizes went to Messrs. Stoddart, Hollingworth, and May; in the nurserymen's class to Messrs. Paul, Cant, and Keynes. In the open class for six, Mr. Cant was second and Mr. Walker third.

The next class was for six Roses (Tea and Noisette excluded), good of their kind, to be judged for their perfume. La France, very fine, from Mr. Keynes was first. For six Tea or Noisette Roses, to be judged for their perfume, the same exhibitor was also first with Devonians.

For twelve single blooms of distinct varieties, Mr. Keynes and Mr. Turner were the prizetakers; Madame Rothschild, Marquise de Castellane, Ferdinand de Lesseps, Marie Baumann, Louis Van Houtte, Pierre Notting, and Alfred Colomb were large and excellent. Mr. Cant was third, Marie Rady being a star of the first magnitude, and Horace Vernet as well as several others very fine.

Of Roses in 8-inch pots Messrs. Paul & Son produced one of the finest collections ever seen at this season of the year, or, indeed, at any other. They were models of good culture, healthy, compact, evenly-matched, and their blooms magnificent. Paul Néron had flowers 6 inches in diameter, and among the others, Louis Van Houtte and Madame Alfred de Rougemont, one of the few white Hybrid Perpetuals, were worthy of the highest praise.

Among miscellaneous subjects we noted a collection of Palms and fine-foliaged plants from M. Dalliére, of Ghent; an excellent stand of Pyrethrums from Messrs. Kelway, Langport; Ranunculuses from the same; fine Carnations and Picotees from Mr. Turner, Slough. Messrs. E. G. Henderson sent a group of Tricolor and Spotted Pelargoniums; and Messrs. Downie, Laird, and Laing one of Tricolors and Bronze, the latter very fine indeed. From Messrs. Standish & Co. came a basket of the pure white *Bouvardia Vrelandii*, not fully out, but evidently a most desirable variety.

FRUIT COMMITTEE.—G. F. Wilson, Esq., F.R.S., in the chair. Messrs. Kelway & Son, of Langport, sent fine examples of their seedling Potato Pearly White, a cross between Ashleaf Kidney and Prince of Wales. It was referred to the experiments at Chiswick. Messrs. Wheeler, of Gloucester, sent Kingsholme Cos Lettuce, which is considered a very fine selected stock of Paris White Cos. Mr. Richard Dean, of Ealing, sent a collection of Lettuce, consisting of Kingsholme Cos, Acme White Cos, Alexandra Cos, Crystal Cos, and Victoria White, all of which are good selections of the true Paris White Cos slightly varying in character. Sugarloaf Bath Cos and Squire's Wiltshire Cos are synonymous. Mr. Evershed, Munsted Gardens, Godalming, sent samples of Early Prolific Marrow, which has been proved at Chiswick to be a good selection of Alliance.

Mr. Charles Turner, of Slough, sent fruit of a seedling Strawberry raised at Frogmore, called Aromatic. The fruit is of good size, quite conical, and regular in shape. Seeds large, and deeply embedded. Skin deep red. Flesh tinged with red, firm and solid, with a fine brisk aromatic flavour. Mr. Turner also exhibited fruit of James Veitch Strawberry, a large, showy, roundish-conical fruit of a bright red colour, but the flesh is very tender and woolly, and with little flavour. Mr. Laxton, of Stamford, sent a seedling Strawberry called Traveller, a hybrid between La Constante and Sir Charles Napier. It is of medium size, conical, and occasionally slightly cockscomb-shaped. The skin is very dark red, and when quite ripe, approaching dark mahogany. The seeds are large and prominent; the flesh very firm and solid, with a brisk and rich flavour similar to the Hautbois. Mr. G. Johnson, gardener to W. C. C. Thornhill, Esq., Ickenham, Uxbridge, sent very fine dishes of Dr. Hogg and Sir Joseph Paxton Strawberries, which received a cultural commendation. Mr. J. Evans, gardener to Col. Penny, Somerton Erleigh, Somerset, sent a fine green-fleshed Melon of the Egyptian class. It was delicious in flavour, and was highly commended by the Committee. Mr. Mackay, The Gardens, Darnhall, Wansford, sent Mackay's Hybrid Melon, which was not equal in flavour to the preceding.

Messrs. Osborn & Son, of Fulham, exhibited fruit of the Gamboe (*Xanthochymus pictorius*), which is very rarely produced in this country, and received a cultural commendation. Mr. Piccirillo, of 43, Wigmore Street, sent a quantity of New Queen Onion, a silver-skinned Onion like Nocera.

FLORAL COMMITTEE.—Dr. Denny in the chair. The number of subjects exhibited was very limited. Cultural commendations were given to Mr. Burnett, gardener to W. Terry, Esq., for a remarkably well-grown group of *Anætochilus Lowii*; and to Mr. McLaren for a collection of seedling Delphiniums. First-class certificates were granted to Mr. Fowler, Castle Kennedy, for *Abies Douglasii* Stairii, noticed in another page; to Mr. Bull for *Macrozamia corallipes*, *Echeveria scapophylla*, and *Lilium Humboldtii*; to Messrs. Stacey & Son, Dunmow, for *Verbena* Lady of Lorne, blush tinged with lilac peach, large in pip, and with very large trusses; and to Mr. G. Smith, Hornsey Road, for Ivy-leaf Pelargonium Argus, with, for its class, large flowers magenta rose with a scarlet flush at the base of the petals.

From Mr. W. Paul came Golden Tricolor Pelargonium Countess of Flanders, Silver Tricolor Lady D. Nevill, and cut blooms of Dr. Denny's fine new varieties. Mr. C. Noble, nurseryman, Sunningdale, sent cut flowers of the beautiful *Spiræa palmata*.

Mr. C. Kimberley, Coventry, had first-class certificates for Golden Tricolor Pelargoniums Gem of Tricolors and Empress, two splendid-coloured sorts; and Mr. R. Dean, seedsman, Ealing, had a like award for Mauve Queen Stock, a very fine variety which has been before exhibited, and then reported of most favourably. He also sent cut blooms of a shrubby *Calceolaria* called Coronet, which appears to be a very desirable kind, but plants of which cut blooms only are exhibited are not eligible for an award. From Mr. Dean came also a very promising hardy *Tropæolum*.

G. F. Wilson, Esq., Weybridge Heath, contributed some lovely Lilies, of which *Lilium Martagon dalmaticum*, deep purple, and *L. Humboldtii* had first-class certificates. A cultural certificate was given to Mr. J. W. Lawrence for *Maxillaria venusta*. Mr. Green, gardener to W. Wilson Saunders, Esq., sent a collection including *Stenorrhynchus Origiesii*; and Mr. Wilson, gardener to W. Marshall, Esq., Enfield, a yellow-flowered Cattleya, and young plants of *Platycerium grande* in pots. From Messrs. Waite, Burnell, & Co. came two varieties of Canterbury Bells the one with white, the other with blue flowers, very large, and being to all intents double, from the calices being coloured.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

THE twenty-ninth Anniversary Festival of the Gardeners' Royal Benevolent Institution was held on Tuesday at the London Tavern, under the presidency of the Rev. S. Reynolds Hole. Amongst the general company were Sir J. Bennett, Sheriff; Sir W. Mitchell, Major Harding, Mr. Tom Hood, Mr. E. L. Blanchard, Mr. Edmund Yates, Mr. H. Huggins, Mr. John Lee, Mr. W. Hurst, Mr. G. F. Wilson, Mr. Charles Walton, Mr. J. Messent, Mr. H. J. Adams, Mr. H. J. Veitch, Mr. Charles Turner, Mr. James Gray, Mr. Thomas Moore, Mr. Robert Marnock, Mr. E. J. Beale, Mr. C. Shaw, Mr. Peter Berlyn, Mr. John A. Gilbert, Mr. G. Paul, Mr. J. Crisp, Captain Styan, Mr. A. Watson, Mr. J. T. Burnell, Mr. H. J. Huggins, Mr. A. E. Huggins, Mr. A. Percival, the Mayor of Cambridge, &c. That portion of the room which lay immediately behind the chair looked like the first view one gets when entering a magnificent conservatory. Clusters of the rarest exotics tapered gracefully to the ceiling of the noble room, forming, as it were, a shady alcove, in which the Chairman's seat rested. At the further end of the room a similar though smaller display of exotics was seen, and the tables were covered with a profusion of exquisite flowers and Ferns, placed in vases alternately with Pine Apples, Melons, Grapes, and Strawberries. These were the beautiful contributions to the enjoyment of the evening by the gardeners, and they were certainly as appreciable as the excellent repast laid for the guests upon the table. The gallery was filled with ladies. About 200 sat down to dinner, and when the cloth was removed,

The CHAIRMAN, who, on rising, was received with loud and prolonged cheers, said: Ladies and gentlemen, it is my first duty, as it is most assuredly my first desire, to propose to you the health of Her Most Gracious Majesty the Queen [cheers]. Coming here as a gardener, with gardeners in my head and gardeners in my heart, I had almost said that Her Most Gracious Majesty was the Queen of Spades [laughter]; and I am prepared to defend that designation as something more than a mere lapse of tongue—first, because Queen Victoria has been the Royal patroness of this Institution for the last twenty years [cheers], and again, because florists, as lovers of peace and order, have had the blessing of living under a monarchical institution not only as citizens but as florists, because the monarch of our gardens is a Rose [loud cheers]. And again, I say this because the Queen of Spades reminds me that Queen Victoria holds the same superiority over all of the feminine monarchs as the Queen of Spades now does in that popular and fashionable game with which you are all acquainted—Bésique [laughter and cheers]. But, ladies and gentlemen, in this latter respect I must beg of you to notice a great dissimilarity. The Queen of Spades does not well succeed without the companionship of the Knave of Diamonds, but the Queen of England lives with her own goodness alone, and the only knaves she knows are her foes. To

"Frustrate their knavish tricks,"

shall ever be the prayer of Her Majesty's people, and therefore I am honoured in giving you the toast of "Her Majesty the Queen."

The toast was honoured with the utmost enthusiasm, and the National Anthem sung.

The CHAIRMAN again rose and said: Ladies and gentlemen, the next toast I have to propose to you is that of "Their Royal Highnesses the Prince and Princess of Wales and the rest of the Royal Family." [Cheers.] We are told by those who cannot be mistaken that the Prince of Wales inherits from his Royal

mother a royal virtue—that of kindness and consideration for those who serve him. I know from Mr. Carmichael, his gardener, that those who do serve him in the horticultural department respect him, not only for his high position, but also out of personal regard and attachment for him. I ask you to drink the health of the Prince of Wales because he is, not only from his position, but also on account of the principles I have mentioned, the right man in the right place as the Royal patron of this Institution. [Cheers.] I trust that the flower he wears in his royal buttonhole may have every year a dearer and nearer effect upon that heart in which blooms the Rose of Denmark. [Loud and prolonged cheers.] We are accustomed to lump the “Rest of the Royal Family” together—to treat them rather as we treat “&c., &c., &c.,” at the end of a sentence [laughter], but on this occasion there is one I would select out of that proud rank, not only because he has just presided at a meeting of the Royal Horticultural Society at Birmingham, but because he entertains a royal sympathy for and interest in the gardener’s gentle craft. [Cheers.] I do not think that the great Arthur himself, surrounded by the flower of chivalry and the Knights of the Round Table—and I am told there are some of them here to-night [laughter]—could have looked more a gentleman, or behaved in a more genial way, than Prince Arthur did at Birmingham, although the rain not only came through the canvas, but dripped from umbrellas and sunshades until the richest cake on the table became a mere sponge, and the rain thoroughly demoralised the mint sauce. [Laughter.] Ladies and gentlemen, I now give you the toast of “Their Royal Highnesses the Prince and Princess of Wales and the rest of the Royal Family.”

The toast was drunk with all the honours.

THE CHAIRMAN: To the Army, Navy, and Reserve Forces we owe the enjoyment of peace; we owe them our gratitude, and we must give them our faith, because, if they continue to be what they have been and what they are, we shall never be afraid of seeing any Prussian uniforms among our German Asters [laughter], or Yankee-doodledum amongst our American plants. [Renewed laughter.] Never, as we sit under our Vines, shall our spirits be perturbed by the discharge of foreign Grape. [Laughter.] Never shall our Peas be shelled by the grimy hand of our enemy, instead of the clean fingers of our cook. [Cheers and laughter.] We shall not see amongst our Scarlet Runners any other uniforms running and changing about. We shall have nothing more martial than *Maréchal Neil*. I have, ladies and gentlemen, great pleasure in giving you the toast of the “Army, Navy, and Reserve Forces,” coupling with it the name of Major Harding. There is no naval man, I believe, in the room, but we have our excellent Secretary, Mr. Cutler, who I do not think was long enough in the navy to become an admiral or even a captain. [Laughter.] I do know that there was a Capt. Cuttle in the navy, but I do not know that there was a Capt. Cutler. [Renewed laughter.] The toast having been drunk,

Major HARDING returned thanks on behalf of the forces named, and especially for all the good expectations the company held of them as to the future.

THE CHAIRMAN again rose and said: Ladies and gentlemen, hitherto we have been like lovers in the home which cheers all hearts, especially the hearts of those who love the garden. We have been like the Laureate’s gardener’s daughter, because when I speak of the subject most at heart we get nearer and nearer, like doves round a dovecot, whirling round and round about, and still getting nearer and nearer to the centre. Now, ladies and gentlemen, it is that we come to our main object—the toast of the night. [Cheers.] I have no doubt, ladies and gentlemen, that most of you have heard the story of that distinguished foreigner who was brought by his friends some years ago to the Anniversary Festival of the Gardeners’ Royal Benevolent Institution. When it was suggested to that distinguished foreigner that if he felt disposed to assist the funds of the Institution an eligible opportunity had then arrived, he was seized by a strange perplexity, and did not appear to appreciate the opportunity. [Laughter.] And why? For this reason. He remarked, “If these are the gardeners, and this is the way they live [laughter]—if this is their daily fare [renewed laughter]—if they eat these things and drink these things, to the sounds of exquisite music, with their charming wives and sisters smiling upon them [great laughter], I think, *mon ami*, I should rather reserve my spare gold for those who seem to me to be more helpless than the gentlemen I see.” [Loud laughter.] He was told, no doubt, that those around him were not the gardeners, and that the ladies were not their widows and orphans; and I have no doubt those just claims were brought to his notice which I will now ask leave to urgently and earnestly impress upon you. Ah, ladies and gentlemen, I should like to ask seriously what class of men conduce more to the promotion of the enjoyment of life, and of the rich men who employ them, than the gardeners? [Cheers.]

“The stately homes of England, how beautiful they stand,
Amid their tall ancestral trees through all this pleasant land.”

But, in the first place, they owe their beauty in a great degree

to the landscape gardener. What is their chief place of beauty? It is their garden. What would Chatsworth or Blenheim be without their beautiful gardens? When the merchant princes of England leave the dust of the busy marts of commerce, where do they find their chief rest but in their gardens? [Hear, hear.] Where has the richest man in Manchester, or perhaps in England, spent his spare gold? In building some forty glass houses, in which he has collected all that is most rare in flowers and fruits; and if there is a fête to be given, if there is a rejoicing to be made, if there is to be a religious or a secular ceremonial, if a church is to be decorated, if there is to be a wedding or a christening, all you have to do is to send to his gardener for flowers. [Cheers.] Consider for one moment the gratification the rich man derives every hour and every day from his garden. He comes down to London to his breakfast, and what is more refreshing to his palate than the Strawberries, the Peaches, and the Grapes sent up, fresh gathered, from his country garden? At his lunch he has his fresh vegetables, his crisp salad; and at his banquets, amid the splendour of silks and satins, and the beauty of the pictures on his walls, he must pause to think of the garden which sent him the flowers which cast an odour of sweetness around [cheers], which sent him the luscious fruits which adorn the table. [Hear, hear.] The answer to all this may be, I suppose, “The man is paid.” Well, I do not think any man has a knowledge of or acquaintance with the condition of gardeners if he says they are not, with few exceptions, underpaid. [Hear, hear.] This is the case for three reasons. In the first place, the gardener is required—if he is a first-rate gardener—to have mental power as well as manual skill. He has to buy a great number of new plants, and has to meet with the hostility of many visitors who come to his garden. But chiefly the gardener’s is a perilous life, and that appears very strange; but still it is a strong plea, and one I have to bring before you to-night. Now, at first sight you would naturally think that a man who lived in a beautiful garden had health at his command; but recollect, the gardener must be up early and late [hear, hear], and he is, more than any other man, subject to that rheumatism which cripples so many of our agricultural population. And more than that, the cultivation of fruits in a highly artificial state. Take, for instance, Strawberries and Grapes, which look so nice; they require summer heat, although at the time there may be snow on the ground; still the gardener must go to the forcing house with the thermometer at 70°, with the perspiration on his forehead, whilst outside it is 10° below freezing point. Thus it is no unusual thing to see frequently in our obituaries the deaths of gardeners taken off in the prime of life. But then you say, “All this is true, but they are well enough paid to put something by for the time of need.” Well, how is it that when, if a man puts aside once a week for twelve months 1s. 8d., he can have a pension of £16, so few gardeners comparatively join this Society? I believe the reason so few gardeners are connected with this Institution to be this—that the resources of the Society do not admit of its giving immediate help when it is wanted by gardeners in the time of need; and you can hardly expect a soldier to subscribe to a fund for succouring the wounded unless he is sure there will be an ambulance and a doctor in waiting when he falls in the fight. [Hear, hear.] The remedy, ladies and gentlemen, for this state of things is to augment the funds of the Society, so that gardeners may be induced to join. In the first place, I think the masters ought to do more than they do. They ought to do more than tell the man to save. Oh! what a very easy thing it is to tell the man to save. [Hear, hear.] Did you ever set up a money-box? I remember setting up one in my boyhood, and when I put a few pence and two or three fourpenny-bits in, I began to rattle and shake it and try to get them out; but they would not come out, and then I got the blade of my penknife and extracted them by certain mechanical means, and ultimately I sold the money-box to a friend, and never kept one since. Well, then, I think the masters should do something more than they do. They should tell their gardeners of the advantages of a society like this, and the gardeners should make it a condition that they should subscribe to this Society, which would help them in the time of need. Ladies and gentlemen, I have few words to add on behalf of this Society, which has relieved nearly 200 needy gardeners, and has now 60 pensioners on its list, at an outlay of £1,850 a-year [applause]. I would just say that there lives, not a stone’s cast from my own garden gate, a very faithful clever old gardener, who served my father first and myself afterwards, for a period of more than forty years. Suddenly his strength failed. He had saved nothing—he was too fond of flowers for that. I have known him to give half a guinea for a pair of Carnations when he had only £1 a-week [laughter]. Well, I was not rich enough to support himself, his wife, and daughters, so I gave him a cottage. Then what was he to do? Well, he had only to ask me to write to the Secretary to claim a pension of £16 a-year. That pension is enjoyed ever since, and I daily see the proof of the real good which this Society is doing to the gardeners [cheers]. Now, ladies and gentlemen, I have only a few words to add. You would not like

me—indeed, I should not like myself—if I were to forget the calling of my profession. I say this to you, that you never spend any money which is safe except the money you give in true charity. Be generous, as you hope for comfort in your own time of need. "Give, and it shall be given to you." "He who considers the poor, the Lord shall be with him in the time of visitation." Ladies and gentlemen, the toast I have to give you is "Continued Success and Prosperity to the Gardeners' Royal Benevolent Institution," and I shall couple with the toast the name of Henry Huggins Esq., the Chairman of the Stewards.

The toast was drunk with three times three, and amidst long and prolonged cheering.

Mr. H. HUGGINS returned thanks, and said he could endorse the observations which had been made by the Chairman as to the benefits to be derived from the Institution. As one of the Committee of Management he could conscientiously say that the Institution was well worthy of the best consideration of all present, and he hoped, under the able presidency of the Chairman, the Anniversary Festival would have for the Society a most beneficial result. [Cheers.] Had the Secretary told him that his name would have been coupled with the toast, he should have prepared some remarks and statistics which might have proved interesting to the company. As it was, he hoped they would respond liberally to the appeal made by the Chairman.

Mr. EDMUND YATES then proposed the health of the Chairman. He said that he was aware that frankness was one of the horticultural virtues, because once when he ventured to give advice to a gardener the latter told him to leave him to himself, as he (Mr. Yates) knew nothing at all about the matter. [Laughter.] Emulating that frankness he was about to take them all into his confidence, and inform them that he had been betrayed in a most dastardly manner. The duty which devolved upon him was to propose the health of the Chairman. [Cheers.] He had not the slightest doubt that it was on account of his total ignorance of gardening that the toast had been given to him. [Laughter.] Ever since the early day when, with most tremendous astonishment, he saw his own initials in Mustard and Cress—ever since he endeavoured on leads to cultivate Ivy—"a slow-growing plant" [laughter]—which was much damaged by cats in London [laughter], he had not the remotest connection with flori or horti-culture. But he knew their Chairman, and whilst they might speak of his floricultural and horticultural talents, he (Mr. Yates) could speak of him as a literary man, a Christian clergyman, and an English gentleman. [Loud cheers.] Until this evening he had no knowledge of the Chairman's remarkable power of eloquence, and he was perfectly certain there would be now a new era in English literature, and that his friend Tom Hood would receive a new contributor of jokes to *Fun*. [Laughter and applause.] He begged to give "The health of the Chairman, the Rev. Reynolds Hole."

The CHAIRMAN, in acknowledging the compliment, said it was little more than twenty years since the greatest writer of the century, at all events the writer who was read more than any other—Charles Dickens—occupied that chair, and he (Mr. Hole) considered it a great honour indeed to sit where he did on that occasion. It was also a great gratification to him to have his health proposed by one of his most dear and intimate friends. Before he sat down he begged to propose "The Corporation of the City of London," coupled with the name of Sir John Bennett.

Sir JOHN BENNETT replied in a humorous speech.

The other toasts of the evening were "The Horticultural and Botanical Societies of England," "The Patrons and Friends of Horticulture," "The Nursery and Seed Trade," "The Secretary," and "The Ladies."

BEDDING-OUT.

By THE REV. C. P. PEACH.

(Read before the Horticultural Congress at Birmingham.)

I was going to have begun this paper with a short history of the bedding-out system, but the time allotted for each paper would hardly be sufficient to give any general summary that would be of interest to my hearers. Suffice it to say, that though in some few places the plan of massing beds of separate kinds of flowers had begun more than twenty years ago, yet it may fairly be stated that as a general custom it has been introduced within the last twenty years, and we may almost date its advent into popular notice from the days of the first introduction of Tom Thumb Geranium and Purple King Verbena.

However, my object to-day is to defend the system against its present detractors, as I think nothing in the history of gardening has tended so much to spread the love of flowers and to make gardening popular amongst so many people as this plan which so rapidly sprung up into favour; so that we may safely say there are thousands of plants used now where previously they might be counted by hundreds and tens, and

hundreds of gardens are gay now during the summer months where previously a few untidy borders of neglected perennials existed. This spread of the bedding-out system—of planting out, that is to say, plants in reference to their colour, habit of growth, form, and choosing plants that are most persistent in their bloom, instead of merely planting mixed borders indiscriminately—has done more to create and establish a love of plants than all the other systems which preceded it.

Now, it is very easy to find fault with bedding-out; it is very easy to say it is vulgar, and that it is a mere massing of gorgeous colours—a heap of scarlet Geraniums here, and a lot of yellow Calceolarias there; it is very easy to say that it is causing persons to neglect the old perennials, alpine plants, flowering shrubs, and so on. It is always, I think, more easy to find fault than it is to give judicious praise. Take an amateur, for instance, through a picture gallery, who thinks himself a good judge of painting, and how much oftener you will find him criticising the faults than stopping to admire the beauties. He will say, "Oh, there is too bright a green here, too glaring a red there, a want of half-tones in this, a deficiency in high lights in that, and so on perhaps through every picture in the Royal Academy; never stopping to point out the beauties, but criticising any defect, or perhaps damning a really fine picture with faint praise. And so I think it is much the case with bedding-out. It is much easier to point out defects than it is to praise what is good; it is easier to give a sweeping condemnation of the whole system than to show what is right and what is wrong, and to discriminate between what is worthy of imitation and what is to be avoided.

Now, I am not going in this paper to enter upon a general and indiscriminate defence of the whole system, but I want to show that there is no wisdom in condemning it merely because in many instances it is done without either taste or refinement. I think every nobleman, gentleman, or amateur who cares about a garden should not only have his garden for spring and summer bedding plants, but also an herbaceous and perennial border (which should have a background of shrubs); a rosery, an alpine rockery, and a place for growing Ferns; but I would not mix them up together where it could be avoided, as they are much better kept separate and distinct. An herbaceous border can never be made to look in harmony with highly dressed ground, nor does it look well in front of the windows of a house; and for that reason I would not mix up the two together, but endeavour to keep the garden near to the house for spring and summer plants. I also wish to point out that to carry out the bedding system well, to make a garden not only gay and rich in colouring through all the summer months, but interesting and instructive, not only to those who grow or own the plants but to all who see it, is by no means an easy thing, and requires not only taste and judgment and a knowledge of the habits of plants, but also skill in the harmony of form and colour. Nor do I, again, think it is wise, when we know how much bedding-out has done to make gardening popular. When we see our public parks in London and other large towns appreciated by so many of the lower orders, and principally, I affirm, because they can now see in great perfection some of the most beautiful objects of God's world—flowers, which they never would have seen had it not been for the spread of the system of planting-out the beds afresh every year; because the old herbaceous and perennial plants, of which there is so much talk now, could never have lived year after year amid the smoke and dust of our great towns—when, I say, we find that this system gives so much pleasure, and that of the purest kind, to the working classes, I do not think it wise to raise this present outcry against bedding-out on the score of its being vulgar and gaudy.

What I think has tended to give some persons a distaste to bedding-out is that many people who have not proper appliances and means to boot adopt the system, and make the interest of their garden entirely depend on the summer bedding, when, at the best, it is only a makeshift with them. I will not speak now of spring or winter bedding-out, the first of which I can highly recommend to those who have the proper means and amount of space to give over to it, and which, to a certain extent, can always be made to work well with summer bedding-out, even where the whole garden is not devoted to it. With regard to the latter, it has never yet given me the least pleasure when I have seen it. Winter is such a dreary time in a garden—with snow and frost, damp grass and wet walks, and dull and dark weather—that it is hardly worth while to fill beds with evergreens or coloured Kales, and make patterns, as

some do, with broken spar, and brick, and gravel, and ashes, and all that kind of—well, to use a strong word—rubbish. There is no growth to watch, no changes to take place, no interest to keep up. When once you have seen a winter garden there is no variation, unless it may be a little more or less snow, or a little more or less slush; so that I think one fault which is found with the bedding-out system—that the beds are empty during the winter—is comparatively a trifling one, because, if the form or plan of beds is good, and if they are properly dug over and kept tidy, they do not look in the least out of harmony with the general aspect of the winter months; moreover, if a certain amount of hardy edging plants are used, especially in the larger beds, in the general planting-out in the summer, such as variegated Arabis, Golden Feather Pyrethrum, variegated Periwinkle, *Cerastium tomentosum*, *Coprosma*, &c., these beds will always have a good deal of colour, and these edgings can, to a great degree, be made permanent.

I will not, however, take up your time with more observations upon winter or spring gardening—the latter would require a paper to itself. I will confine what few remarks I have to make on summer bedding-out only.

I have already said that summer bedding-out has often got into disrepute because so many undertake it without proper appliances, and that is not only the case with those who have only small gardens and no glass, but also in large places where bedding-out has, as it were, been superadded to the existing state of things, and gardeners to noblemen and country gentlemen have to supply thousands of bedding-out plants without any additional means being given them. This is, perhaps, one of the worst features of what I call the makeshift system. Plants have to be housed during the winter how and where they can, not according to the requirements of the plants, but according to the means at a gardener's disposal; and the plants are reckoned at bedding-out time not by their quality but by their quantity. It is no uncommon thing to hear one garden compared with another merely by the number of plants that are put out. "Oh! my Lord A——'s garden must be better than Mr. B——'s garden, because his head gardener plants out 100,000 Geraniums, while Mr. B—— has only a few hundreds;" whereas Mr. B——'s few hundreds, if carefully grown in houses suited for their winter growth, not crowded together in boxes or in cutting pans, or stuffed under the stages of vineries, or eking out a miserable existence in cold frames protected with mats and straw, but grown with plenty of light and air and heat and moisture, put into separate pots, properly pinched back, and, in other words, looked after and tended during their growth—these plants, few though they may be, will be far more worthy of being called bedding plants than the thousands belonging to Lord A—— or the Duke of C——, if only grown on the makeshift principle. Another great fault, too, in many large gardens is that there is not sufficient variety of plants used—three or four different sorts of flowering zonals, many thousands of each kind being grown; a few thousand tricolors or white variegated; two kinds, perhaps, of *Calceolaria*; one kind of *Lobelia*; and so on. The selections may be good, perhaps, of their kind, but when they are grown by the thousand it becomes monotonous, and the eye tires of seeing large beds of the same kind repeated over and over again. There is no interest. When once one has seen a bed of 500 Tom Thumb Geraniums, or 500 Mrs. Pollock, one does not very much care to see it again, unless it may be at a certain interval of time, to see how much they have grown.

I do not always blame the gardener, because many employers see great masses of flowers and plants, reckoned perhaps by tens of thousands, in other gentlemen's and noblemen's gardens, and then they expect their gardener to do the same without giving proper houses or additional hands, or even giving him liberty to buy new plants; so that they have to go on increasing their stock every year from the old sorts, and perhaps every year being ambitious to bed-out a greater breadth of ground; the plants at bedding-out time each year instead of being better are rather worse. What is the result? Why, the beds are not properly filled at first. Plants that have been drawn up in vineries or crammed in boxes in cold pits do not recover till nearly half the season is over, and instead of the garden being gay and interesting from the first day it is planted, it is often many weeks before there is any effect produced. It is not, however, only in large gardens, as I have said before, that we find this evil; anyone who attempts to rely entirely, in small gardens, on what are usually called bedding-out plants, without proper means at his disposal, and neglects other plants on that account, is bringing the bedding-out system into disrepute

quite as much as the man who beds-out his thousands irrespective of their quality. He had far better do his best with perennials carefully attended to, such as Phloxes and Pentstemons and Pansies, Carnations, &c., and then put in a few Geraniums, tender annuals, and other things amongst his other plants, to add variety and interest.

(To be continued.)

THE POPLARS,

THE RESIDENCE OF F. G. WILKINS, Esq.

THE name that stands highest on the list of prizetakers at the metropolitan exhibitions is that of Mr. John Ward, the gardener at this place near Leyton. His Show Pelargoniums are allowed to be the most perfect productions of their kind ever exhibited; he holds the highest position with Cape Heaths; for Orchids, wherever he has exhibited, he has taken the first place. As regards stove and greenhouse plants he succumbs to Mr. Baines, the redoubtable champion of this class, although only in the size of the individual specimens; but in these as objects of culture and skilful manipulation I think the one does not excel the other.

One day this week, having business at Leyton, I thought an hour with Mr. Ward would be well spent. I therefore paid him a visit, and noted a few of the most striking points for "our Journal."

Excepting one house, which is devoted to the largest specimen plants, the others are not large, and, with one or two exceptions, are span-roofed. The houses in which the Heaths and Geraniums are grown are admirably adapted for the purpose for which they were built. The Heath house is 28 feet long, 14 feet wide, and 9 feet high, a platform being in the centre, with narrow staging down the sides and ends. The Geranium house is of the same description, except that it is 11 feet high. These houses are span-roofed, and run north and south. The ventilation is provided principally from the sides, the air passing over the hot-water pipes. Very little brick-work is required, as the wall-plate is only about 1 foot above the ground-line. The rafters and bars are exceedingly light, and the panes of glass large; the plants are also placed close to the glass, and the internal arrangement admits of viewing the plants to the best advantage; Mr. Ward told me that if he had another opportunity of building houses for this class of plants he would have them done on a similar plan. I can truly say that I have not yet seen a healthier or better-grown collection of Cape Heaths than there is here. The most notable species in flower on the 11th of June, the time of my visit, were *Erica tricolor elegans*, *E. tricolor Wilsoni*, *E. elegans*, *E. obbata* very fine, *E. ventricosa grandiflora*, *E. Cavendishii*, and *E. depressa*.

Amongst stove and greenhouse plants there are numerous examples of skilful culture. *Aphelexis macrantha purpurea* is the best, and of it there is a notable example. *Dracophyllum gracile* formed a compact mass of its snow-white trusses of flowers. *Statice profusa* is a fine species of very dwarf habit, and has abundant trusses of purplish-blue flowers. *Hedera tulipifera* is a distinct plant, with peculiar drooping bell-shaped flowers. *Phenocoma prolifera Barnesii* is one of the best for exhibition, and of it there is a grand specimen, probably the finest in the country. Amongst stove plants nothing surpassed the *Dipladenia amabilis* in brilliancy of colouring. *Clerodendron Balfourianum* is very striking, and one of the best for exhibition. *Anthurium Scherzerianum* had very fine spathes. In the stove I noticed a very fine form of the Australian Bird's-nest Fern, *Neottopteris nidus*, with large, broad, massive fronds. Mr. Ward related a singular occurrence which happened to this plant. In moving it from the show tent to the van the wind caught the plant, and broke it over close to the surface of the pot as cleanly as if it had been cut with a knife. The upper portion was potted in a small pot, and soon established itself as if nothing had happened. This, I think, is a "wrinkle" worth noting. I have often served Pine plants in this way, but had not thought of trying it with the *Neottopteris*.

As already intimated, the stage Pelargoniums are a special feature. The plants have often been noticed in this Journal in terms of high commendation. The show plants are perfect sheets of bloom, from 4 to 6 feet across. Very few of our readers will ever try to grow such plants, but many will grow the varieties for the decoration of their greenhouses and conservatories. I therefore noted a few of the best and most distinct for this purpose. They are as follows:—Rob Roy, Con-

queror, Patroness, Mary Hoyle, Maiden Fair, Pericles, Maid of Honour, Corsair, Warrior, Charles Turner, Exhibition, John Hoyle, Conflagration, Purpureum, Celeste, Mdle. Patti, and Atalanta.

There is also under the care of Mr. Ward a very choice and healthy collection of Orchids. Those denominated "cool-house Orchids" are worthy of attention, because they can be grown with little expense, and are as easily managed as stage Pelargoniums. There are a few plants of Masdevallias and *Odontoglossum crispum* (Alexandræ), under my own care, and having no better accommodation for them they are turned into a cold frame at the back of a north wall in May, and there they will remain until the middle of September. All that

they require is a sprinkling of water, and the frame to be shut-up about four or five o'clock in the afternoon. These fine Orchids will not succeed in a high temperature, nor do they like too much artificial shading. The house here is a lean-to facing the north, and there is very little pitch to the roof. The temperature in winter falls as low as 35°, although 45° is considered to be the best night temperature. The plants are very healthy, and are making exceedingly fine strong growths. There are numerous fine varieties of *Odontoglossum crispum*, a name to which all the varieties of *O. Bluntii* and *O. Alexandræ* are now referred. One fine form, the ground colour suffused with purple and densely spotted, has been named in honour of Mr. Wilkins. I also counted six handsome spikes



Oncidium sarcoodes.

on another which had been imported as a small plant but five years ago. *O. Uro-Skinneri* is a strong-growing species and very distinct, in striking contrast to the pretty little *O. Rossii*, which was also in flower. There is also a very fine mass on a block of *Oncidium trifolium majus*. *Oncidium cruentum* was likewise throwing-up fine spikes. In contrast to all the others is the *Epidendrum vitellinum majus*; this had a spike of its brilliant orange-scarlet flowers.

In this cool-Orchid house, and under the shelter of a glass screen, are some very luxuriant specimens of the Filmy Ferns, particularly of the New Zealand species, *Todea superba* and *T. pellucida*. Passing from this house into that devoted to Orchids from Mexico and the East Indies, we find it in two divisions; *Cattleyas*, *Lælias*, *Oncidiums*, and some of the *Dendrobies* are grown in the cooler end, and some of those requiring a higher temperature are placed here to prolong their bloom. There was a nice specimen of *Dendrobium McCarthyæ*, a splendid species from Ceylon, the finest of the genus. It succeeds on a block, and the flowers continue in perfection for two months. *D. Bensoniæ* is also a most lovely

species, but of this there are many inferior forms. *Cypripedium Stonei* had one fine spike. *Oncidium crispum* on a block had four large flowers. I also saw *O. sarcoodes*, a handsome Brazilian species, which succeeds well in baskets.

In the East India department there are many noticeable species and fine specimens, but to enumerate all will only occupy valuable space. I noticed suspended from the roof some strong examples of *Dendrobium taurinum*. Mr. Ward had failed with this previously. He used to pot his plants as soon as they started into growth. The present specimens were fixed to blocks of wood, hung with the roots upwards, and syringed with tepid water twice daily. The plants are making good growth, and, though only imported last year, seem well established. This species, which is not often well grown, should be tried in this way. In its native country, as far as one can judge from photographs taken there, it seems to be one of the most noble of *Dendrobies*. I cannot leave this house without noticing the exceedingly healthy specimens of *Phalænopsids*, particularly of *P. grandiflora* and *P. Schilleriana*; they are models of skilful culture. The plants are grown

in baskets suspended from the roof, and are syringed daily in summer. All the potting, or rather basketing, they require, is the removal of some of the old decayed sphagnum about once a-year and replacing with fresh: a perfect wig of fresh roots is formed outside of each basket. These baskets are made of strips of teak, and are small for the size of the plants.

Mr. Ward has been very successful with all he has undertaken, and as a practical gardener myself, and moderately successful in other branches, I know full well that success can only be secured and maintained by incessant care and untiring labour on the part of the gardener; but this must also be seconded by liberality and consideration on the part of the employer. That this is so in the case of Mr. Wilkins no one can doubt, and if both master and gardener be long spared together we shall see greater things in the future.—J. DOUGLAS.

ROYAL HORTICULTURAL SOCIETY'S EXHIBITION AT BIRMINGHAM.

IN resuming our notes on this Show, which from want of space we were obliged to break off abruptly last week, we must in the first place remark on the extraordinary success attained. That such an Exhibition, held in a great commercial centre like Birmingham, would be a success we never doubted, but that it would be such a success as it has proved, even the most sanguine never expected. Since the memorable International Horticultural Exhibition of 1866 there has never been in this country, take it all in all, a horticultural show so extensive and so excellent as that which closed last Saturday. Horticulturally it was a great success; financially it was a still greater success, and this under the most adverse conditions as regards weather that could well be possible in the month of June. On the Monday, soon after the arrival of his Royal Highness Prince Arthur, who opened the Show on the following day, a heavy thunderstorm broke over Birmingham, soaking thousands who thronged the road to Aston; and the approaches to the tents, cut up by the constant arrivals of plant-bearing vehicles, and puddled by men's feet and horses' feet, soon became a quagmire. If such was the case on the Monday what could one expect on the Tuesday, when the thunder still rumbled, when the rain fell heavily as ever, and when, nothing daunted, visitors flocked to the Show by the thousand? Birmingham folks are very energetic, and Birmingham policemen—whether from natural selection, or some other cause—very energetic too, but even they failed to keep the tents from being taken by storm. They were stern, they were inexorable to a degree; and though the rain poured down so heavily on lightly clad ladies that even the heart of Al would have relented, "Keep back! keep back!" was the cry, till human nature could stand it no longer, the masses were no longer debarred from shelter, and a lodgment was effected. Then, after the Prince had passed round, the great tent was thronged, there was an end to note-taking; the fingers might move, but the feet could not; one was wedged-in on every side; and this state of things continued, with varying intensity, till evening set in.

"If they will, they will, you may depend on't;
And if they won't, they won't, and there's an end on't."

That is true of Birmingham ladies, as it is of ladies all the world over. They had determined on seeing the Prince, determined on seeing the Show, and most religiously their programme was carried out. They were bent on sight-seeing, and they saw one, the like of which, as we have before said, has not been witnessed in England since 1866, and, we say it with pride, the like of which is to be seen in no other country in the world. Not in the world—not in their native lands, be they in the eastern or the western hemisphere—are Orchids such as those at our exhibitions to be seen, and yet the plants are the same, but changed under cultivation. The *Ixoras* of the East, the *Allamandas* of the West, the *Everlastings* from the Cape—where in the wide world are such specimens to be seen? Not in the countries of the Vine, and the Peach, and the Pine are such splendid fruit to be found. The poor little Alpine Strawberry gives place to veritable giants; and nowhere in the sunny South are such vegetables to be seen as there are at our shows, be they those of a little local society or of that Society which has now well-nigh taken them all under its wing.

But to return to Birmingham. Notwithstanding the rain both on the first and second days, the Royal Horticultural Society has never had so successful a show, both in the number of visitors (some 130,000) and the amount (£5000) which these

brought to the exchequer. We congratulate the Society on these results; we congratulate Birmingham on the noble manner in which it has maintained its reputation for doing great things, and on the good which it has directly and indirectly been the means of doing to horticulture.

As the returns of tickets sold are not yet completed, it is impossible to do more at present than give such an estimate of the probable results as may be stated with confidence to be under rather than over what the balance-sheet will disclose:—

Tickets sold prior to opening the Show, about.....	£2,500
Admissions at the Gates.....	2,476
Probable surplus from Prize Fund, about.....	150
" " " Implement Department, about.....	109
	£5235

LILIUM AURATUM.—Only three exhibitors came forward in the class for four pots. Mr. Turner took the first place with three of the ordinary variety, and one of the orange-and-purple banded kind. Messrs. Rollisson, of Tooting, were second. The best specimen pot was shown by Mr. French.

CLEMATIS.—The best six came from Mr. W. Cutbush, Barnet, and consisted of neatly-trained, well-bloomed plants of *Rubro-violacea*, *Magnifica*, and *Jackmanni*.

COLEUS.—Varieties of *Coleus* were not numerous shown, but were well grown. The first prize went to Mr. T. Smith, Lydney Park, for golden varieties *Queen Victoria*, *Baron Rothschild*, *Princess Royal*, *Princess Teck*, *Her Majesty*; and *Beauty of Wichnor*, purple, edged with yellowish white. Mr. Allen, gardener to J. B. Finmore, Esq., was second with very good plants of *Beauty of St. John's Wood*, *Albert Victor*, &c.; and Mr. Coys third.

CALCEOLARIAS.—Of these there was only one exhibitor, Mr. Coys, Newbold Revel, who had, however, well-flowered plants.

SUCCULENTS.—Of these four collections were shown; that from Mr. Croucher, gardener to J. Peacock, Esq., *Hammer-smith*, was the largest and most interesting, as may readily be concluded from the rich collection which he has at command. *Mammillaria*, *Gasteria*, *Cereus*, *Echinocactus*, *Opuntia*, *Echinopsis*, and other genera were represented in many curious and grotesque forms, as, for instance, *Opuntia clavarioides cristata*, and *Euphorbia caput-Medusæ*. Mr. Croucher took the first prize; Mr. Ware, of Tottenham, being second with a good collection; and Messrs. Bell & Thorpe third.

CUT FLOWERS.—Of these there were some very good boxes, the flowers neatly set up in green moss. For twenty-four bunches Mrs. E. Cole & Sons were first. They had the beautiful white *Ixora Colei*, *I. amboynensis*, and *I. coccinea*, *Dipladenias*, *Allamanda Wardleiana*, *Lapageria rosea*, nice *Heaths*, and an *Orchid* or two. The second prize went to Miss M. A. Baines, Southgate House, Southgate. The collection contained choice *Orchids*, *Ixoras*, and *Atacia cristata*, a flower of singular formation. Mr. W. Brown, gardener to Mrs. Alston, Elmdon Park, Birmingham, was third; Mr. J. Parker, Victoria Nursery, Rugby, being fourth. For twelve Mr. W. Chapman was first with a fine box margined with *Fern fronds*. He had *Gloriosa superba*, a splendid spike of *Phalanopsis amabilis*, and *Pteroma elegans*. The second contained nice trusses of *Orchids*. The third prize went to Mr. G. Plumbley, gardener to T. Charlesworth, Esq., of Leicester; and the fourth to Mr. J. Webb, gardener to J. Gulson, Esq., Stoke, Coventry. For cut flowers of twenty-four hardy *Herbaceous Perennials*, Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, was first. He had highly-coloured *Iris*, the double form of *Spiræa Filipendula*, *Brodiaea congesta*, and large bunches of other fine things. Mr. J. Jennings was second with a fine box. George Maw, Esq., Benthall Hall, Broseley, Salop, was third. The first-prize twelve came from Mr. J. Lakin, Chipping Norton, Oxon, and contained *Iris Bronze Beauty*, very distinct, *Dianthus Marie Paré*, pure white, and other fine bunches. G. More, Esq., was second, and Mr. W. H. Turner, Grove Park, Liverpool, was third.

HARDY AND HALF-HARDY PERENNIALS AND ALPINE PLANTS.—For twenty hardy variegated alpine and herbaceous plants, Mr. T. S. Ware was first with a well-grown collection. The most noticeable were the variegated forms of *Funkia undulata*, *F. lancifolia medio-picta*, *Iris fetidissima*, *Polemonium ceruleum*, and *Bambusa Fortunei*. The second prize went to Mr. J. Clift, Selly Park, Birmingham; he showed some very pretty plants—the variegated form of *Saxifraga umbrosa*, *Sansevieria carnea*, *Dactylis glomerata*, *Acorus gramineus*, and *Glechoma hederacea*—the *Ground Ivy*. In the class for fifty hardy and half-hardy variegated plants suitable for bedding, Messrs. Bell & Thorpe had a very nice lot of plants; amongst them were some of the *Alternantheras*, *Hedera japonica* and other *Ivies*, *Phormium tenax variegatum*, *Yucca quadricolor*, *Eurya latifolia*, &c. Mr. Ware had *Ophiopogon Jaburan aureo-marginatum*, *Diplotaxis tenuifolius foliis variegatis*, and others. Messrs. Standish had a collection composed mostly of variegated Japanese shrubs and *Hollies*; some of them would be very effective as pictorial plants. As none of the exhibitors showed according to the wording of the schedule, extra prizes only were awarded.

For twelve hardy perennials in 12-inch pots Messrs. E. & J. Perkins, Leamington, were first with healthy plants of *Dianthus Highclere*, bright crimson. *D. floribundus*, a pleasing rose; *Potentilla Hamlet* and others were pretty. Messrs. Rollisson were second, and Mr. T. S. Ware third.

Collections of Alpine Plants.—Of these there were some nice collections; that from George Maw, Esq., was first, and contained over 130 distinct species; Messrs. E. & J. Perkins were second; Mr. T. S. Ware third; and an extra was awarded to Messrs. Rollisson.

HARDY FERNS.—In one of the small tents devoted to these, Mr. Lowe, of Highfield House, Nottingham, exhibited some very striking forms of our native species. The following had first-class certificates awarded to them:—*Athyrium Filix-femina Albertii*, A. F.-f. centiceps, A. F.-f. *todeoides superbum*, A. F.-f. *Lowei angustatum*, A. F.-f. *Alexandra*, A. F.-f. *Victoria elegans*, *Adiantum Capillus-Veneris optandum*, A. *Capillus-Veneris imbricatum*, A. *Capillus-Veneris angustatum*, A. *Capillus-Veneris multiceps dentatum*, *Asplenium marinum imbricatum superbum*. The fronds of this variety are very distinct. Mr. Lowe also obtained first-class certificates for some curious and distinct forms of *Scolopendrium*, a small crested form of *Osmunda regalis*, also for *Lastrea dilatata Fraserii*, a very small but exceedingly pretty form. First-class certificates were given to the following Ferns from J. E. Mapplebeck, Esq., viz.:—*Athyrium Filix-femina spicatum*, *paucidentatum abruptum*, *flabellatum abruptum*, and *flexile*, *Gillsonia flabellatum*, and *ceratophylloides*; *Lastrea dilatata cristata splendens*, *Pteris aquilina grandiceps Mapplebeckii*, and *Polypodium vulgare bifido-cristatum*.

CONIFERS AND EVERGREENS.—These were arranged in picturesque groups, and served as a screen to the fruit and vegetable tents. Some of the specimens were exceedingly handsome. All the collections might be considered good, and they formed one of the most interesting features of the whole Exhibition. In the class for twenty, Messrs. W. Barron & Son, Elvaston Nursery, Derby, were first: they had a noble specimen of *Thuja gigantea*; a very handsome *Picea Parsonsii*; *Retinospora leptoclada*, a pretty pyramid nearly 4 feet high; *Thujopsis latevirens*, a spreading plant; *Retinospora obtusa*; and Gold and Silver Variegated Hollies were most noticeable. Messrs. Standish, of Ascot, were second, and Messrs. Pope & Son were third, an extra prize being awarded to Mr. G. Davidson, White Cross Nursery, Hereford. For twelve Messrs. Barron again held the highest position. They had a handsome pyramid of the Golden Yew, *Retinospora pisifera*, and *R. plumosa aurea*, a magnificent example of *Thujopsis dolabrata*, and the variegated form of it; *Arthrotaxus cupressoides*, and *A. laxifolia*. Messrs. Standish were a very close second; their collection contained some very rare specimens. *Retinospora pisifera stricta* was very ornamental; *R. plumosa aurea*, very pretty. They had also *R. obtusa alba*, a handsome *Cephalotaxus Fortunei robusta*, *Abies obovata*, and *A. Hookeri*. Mr. G. Davidson was third.

The best single specimen came from Messrs. Barron; it was a grand example of *Retinospora plumosa aurea*. Messrs. Standish had the second best, a fine *Picea Lowii*; and Messrs. Pope had the third best.

HARDY DECIDUOUS TREES AND SHRUBS.—The highest award again fell to Messrs. Barron. The most striking specimens were *Acer polymorphum atropurpureum*, A. p. *pectinatum*, A. *rufinervum*, *Quercus pedunculata concordia*, the Golden Oak; *Quercus pedunculata pectinata*, Variegated Elm, Variegated Turkey Oak, and Purple Beech. Mr. G. Davidson was second with nice specimens.

NEW PLANTS AND MISCELLANEOUS.—Mr. Fowler, gardener to the Earl of Stair, Castle Kennedy, had a first-class certificate for his new white variegated *Abies Douglasii Stairii*, and similar awards were made to Messrs. Carter & Co. for *Anectochilus Ortgiesii*, a handsome kind; to Mr. Maw for *Iris tingitana*, purple banded with yellow; to Mr. Robert Veitch, Exeter, for *Tacsonia exoniensis*, of a very pleasing rose colour; to Mr. Guildford for *Coleus Tryoni*; to Mr. Ware for *Gymnosterix latifolia*, with graceful, broad, grass-like, pale-green leaves; to Mr. Williams for *Pteris Applebyana*, also to Mr. Williams for *Lissochilus Krebsii*. Second prizes in the class for the best new Orchid were taken by Messrs. Veitch and Messrs. Rollisson, each showing the beautiful *Masdevallia Harryana*. For six new plants Messrs. Veitch were first with *Croton Weismannii*, *Dracena amabilis*, *Paulinia thalictrifolia*, *Dracena Dennisoni*, *D. amabilis*, and *Aralia Veitchii*. Messrs. Rollisson were second, showing among others a fine specimen of *Dracena lentiginosa*, and *Todea intermedia* in a case.

In the Miscellaneous class superb groups were furnished by Messrs. Veitch and Mr. Williams, consisting mostly of what are considered new plants, though most of them have been noticed before in these columns. Messrs. Veitch's group, which occupied a large space in one of the centre beds, was excellently arranged, and contained, besides many other plants of recent introduction, *Gravesia bertolonoides*, the beautiful rose-dotted *Bertolonia guttata*, and the pearly-spotted *margaritacea superba*, *Maranta tubispatha*, *Paulinia thalictrifolia*, *Darlingtonia californica*,

figured last year. Mr. Williams had the beautiful *Todea Williamsii*, *Demonorops Lewisianus* and *periacanthus*, two very handsome Palms, fine specimens of *Anthurium Scherzerianum*, and several Orchids. Messrs. Carter & Co. had an excellent *Adiantum farleyense*, *Anectochilus Ordiana*, new *Dracenas*, and altogether an excellent group.

From G. F. Wilson, Esq., Weybridge Heath, came a charming collection of cut flowers of Lilies, including *Lilium Brownii*, white; *L. umbellatum citrinum*, a very handsome unnamed species from the Rocky Mountains. Mr. Holmes, Whittington Nursery, Lichfield, sent a curious plant from the mountains of New Zealand, covered as if with little orange beads.

VEGETABLES.

The show of Vegetables was very extensive, and the quality of the productions was worthy of all praise; probably a better assortment was never before put up at any public exhibition.

COLLECTIONS.—Class 158, to consist of the following:—Two varieties of Peas, two varieties of Kidney Potatoes, two varieties second, early Round Potatoes, twelve of each kind, three heads of Cauliflower, brace of Cucumbers, eight Turnips, eight Carrots, eight Onions, brace of Vegetable Marrows, and three Lettuces. Limited to noblemen's and gentlemen's gardeners in Warwickshire, Worcestershire, or Staffordshire (offered by the Proprietors of *Midland Counties Herald*). In this class five collections only were staged; that from Mr. G. Craddock, The Gardens, Compton Verney, Warwick, comprised a brace of Telegraph Cucumber, Veitch's Royal Ashleaf Kidney Potato, Onions, Carrots, Cauliflower, Vegetable Marrows, &c. Mr. F. Ford, gardener to W. B. Davenport, Esq., Baginton Hall, Coventry, was second. His Globe Artichokes, Carter's Hundredfold Peas, and Gloucestershire Kidney Potatoes were very fine; he had also a brace of Marquis of Lorne Cucumber, very good for that variety.

In Class 159 (collection of vegetables, fifteen dishes, to include not more than four dishes of Potatoes, different varieties, twelve of each, limited to noblemen's and gentlemen's gardeners; the counties of Cornwall and Devonshire excluded), there were eight collections, some of them of an exceedingly high order of merit. Mr. W. Cox, The Gardens, Madresfield Court, Great Malvern, had a collection in plates. He had grand examples of Carter's Hundredfold and Laxton's Supreme Peas, Early Hammersmith Kidney, and Early Coldstream Potatoes, magnificent Large Red Tomatoes, Globe Artichokes, Carrots, Dwarf Kidney and Longpod Beans. The collection from Mr. R. Gilbert was neatly set up in a shallow box 4 feet 6 inches long, by 2 feet 9 inches wide, each dish in small wicker baskets, the intervening spaces being filled in by Curled Parsley. It comprised Laxton's Superlative and Carter's Hundredfold Peas; Golden Multiplier Kidney, and Early Coldstream Round Potatoes; excellent Early Red Tomatoes, White Tripoli and Nuneham Park Onions, Early London Cauliflower, Mushrooms, Kidney Beans, and Globe Artichokes. Mr. G. T. Miles had a collection set up in a box, which contained some very meritorious productions—Ashleaf Kidney and Early Coldstream Potatoes, Rising Sun (a very fine sample) and Laxton's Alpha Peas, wonderful examples of Early White Naples Onion and Early Horn Carrot, Powell's Red Tomato, Globe Artichokes, Asparagus, Cauliflower, Celery, and Kidney Beans. Mr. Miles was first, Mr. Cox second, and Mr. Gilbert third.

For the challenge cup offered by Messrs. Carter & Co., of High Holborn, London, for a collection of twenty-four varieties of vegetables, there were only two competitors. Mr. D. Lumsden, Bloxholm Hall Gardens, Sleaford, was first. He exhibited a dish of Mona's Pride Kidney Potato; Carter's Hundredfold (fine examples, the pods of a deep green colour), Laxton's Supreme and Quality Peas; most excellent examples of Veitch's Silver White Celery, and Improved Giant Longpod Beans. Altogether this was a highly meritorious collection. The second prize was awarded to Mr. W. Cross, gardener to J. B. Lousada, Esq., Peak House, Sidmouth; he had enormous examples of Marquis of Lorne Cucumber 30 inches in length by 10 inches in circumference; Carter's Hundredfold Pea, again, was very fine. The Early Rose and Bresee's Peerless Potatoes were remarkable.

PEAS.—In the class for collection of six kinds, to include Maclean's Best of All, Mr. Cox was first with that variety, Laxton's Alpha, Carter's Hundredfold, Quality, Supreme, and Kentish Invicta; Mr. R. Gilbert was second; and Mr. W. Cross third. In the class for a single dish, Mr. C. Frisby, Blankney Gardens, Sleaford, was first with Laxton's Alpha; Mr. J. Richardson, Boston, was second; and Mr. Cox third with Supreme. For three varieties, Mr. E. Smith, Bentham Gardens, Upper Alstone, Cheltenham, was second, and Mr. Turk third.

For thirty pods of Laxton's Superlative (prizes offered by Messrs. Hurst & Son), Mr. R. Gilbert had magnificent examples, and was first; Mr. Cox was second; Mr. J. Richardson third; and Mr. D. Lumsden fourth.

POTATOES (best twelve Kidney).—Mr. A. H. Biddles, Park Lane, Loughborough, was first with remarkable examples resembling Beaconsfield; Mr. F. Ford was second with an unnamed variety; and Mr. F. Clarke, Barleythorpe, Oakham, third. Mr.

Ford was first for three varieties of Kidneys; Mr. G. Craddock second; and Mr. G. B. Tillyard third.

The best single dish of Round was Early King from Mr. J. Richardson. Mr. F. Ford was second in this class, and Messrs. Poole & Son, of Warwick, third. Mr. J. Richardson also took the highest position in the class for three varieties. Mr. D. Lumsden was second, and Mr. F. Ford third. In collections of six varieties (twelve of a kind), Mr. G. Bagerley, Rose Cottage, Syerstone, Newark, was first. His collection contained fine Mona's Pride and Champion Kidney. Mr. F. Ford was second, and Mr. T. Pickworth, Loughborough, third.

CUCUMBERS.—Two varieties, brace of each. The first prize went to Mr. J. Turk, who exhibited Holder's Dreadnought and Loraine, two white-spined varieties, which were very much alike. Mr. T. Weeton, The Gardens, Wirksworth Hall, Derby, second; and Mr. J. Jennings, The Nurseries, Shipston-on-Stour, third. Three brace, to include Marquis of Lorne, prizes offered by Messrs. Sutton. The prizes were keenly contested, no less than fourteen collections being exhibited. Mr. W. Broadbridge had the first prize, exhibiting a nice brace of Blue Gown. The second prize went to Mr. T. Smith.

The best twelve ONIONS were of the White Naples variety, from Mr. Miles. Mr. J. Turk was second, and Mr. J. P. H. Hickling, The Nurseries, Loughborough, third.

MISCELLANEOUS CLASSES.—The best dish of Dwarf Kidney Beans came from Mr. J. Turk. Mr. E. Smith was second. Mr. R. Gilbert had a dish of Mushrooms, and took a first prize for them. Mr. G. T. Miles had twelve splendid Large Red Tomatoes, and was first in that class; Mr. E. Smith was second, and Mr. J. Turk third.

In the cottagers' classes there were very nice Peas, for which Mr. G. Vernal, of Lansdowne Place, Malvern, gained the first prize. The same exhibitor was also first for Round and Kidney Potatoes. Mr. T. Cox, Kenilworth, was second for Peas and Round Potatoes. Mr. J. Maiden, Broadwater, Kidderminster, was second for Kidney Potatoes. The same exhibitor had also a highly meritorious collection of vegetables, and carried off the first prize, Mr. T. Cox being second.

A SUPPLEMENTARY FRUIT SHOW was held on June 27th, but it was on rather a limited scale. There were three collections of six dishes staged (Pines being excluded from them). Mr. Cox, of the Gardens, Madresfield Court, Great Malvern, had the best; it comprised Buckland Sweetwater and Black Hamburg Grapes, Grosse Mignonne Peaches, Violette Hâtive Nectarines, a nice Golden Gem Melon, and Brown Turkey Figs. Mr. A. Foakes, gardener to J. Humphries, Esq., was second, and in his collection was a well-ripened dish of Foster's White Seedling Grape. Mr. Frisby, Blankney Hall Gardens, Sleaford, third. Mr. Miles, gardener to Lord Carrington, Wycombe Abbey, exhibited a good Queen Pine, and a first prize was awarded to it. In Grapes there was only one competitor for two varieties, a dish of each—Mr. G. Craddock, Compton Verney, Warwick. He had Muscat of Alexandria barely ripe, and Black Hamburg badly coloured; the first prize was awarded. One bunch, Mr. A. Meikle, Read Hall, Whalley, was first with Black Prince, in the class for Black; the same award being given to him in the class for White, White Frontignan being the sort.

For four dishes of Peaches and Nectarines Mr. A. Moffat, gardener to H. Allsop, Esq., Hindlip Hall, Worcester, obtained the highest award with very good Grosse Mignonne, Belle de la Croix, and Téton de Venus Peaches, and a nice dish of Elurge Nectarines. Mr. W. Broadbridge, Walton Gardens, Warwick, was second; and Mr. S. Evans, gardener to C. N. Newdegate, Esq., Arbury, Nuneaton, third. The best Melons were sent from Mr. J. Reid, gardener to R. E. E. Warburton, Esq., Arley Hall, Northwich. Mr. A. Moffat had the second best.

THE SUPPLEMENTARY ROSE SHOW.

ONE of the especial features of the Birmingham Horticultural Exhibition was the additional Rose Show on Thursday, June 27th, the prizes being given by the Committee of the Birmingham Rose Show. This added very much to the interest of the meeting, as hitherto those who came on the shilling days could only see Roses that had been in the tents for two whole days, and were generally (especially if the weather had been hot), very much gone-by, and some of them only ghosts of their former selves. Great praise, therefore, is due to the Committee of the Birmingham Rose Show, and especially to its active Secretary, Mr. Badger, for contributing so much to the pleasure of the visitors on the Thursday and Friday, by giving £105 to be expended in additional prizes for the queen of flowers; and we were very glad to see how much it was appreciated by the crowd of persons who anxiously waited outside till the awards of the Judges had been given, and by the increasing stream of people who flowed through the tent, and who, if we may judge by the constant cry of "Pass on, gentlemen and ladies, pass on," were not willing to pass hurriedly by the rows of boxes filled with beautiful blooms without feasting their eyes, and taking notes of those that most struck their fancy, to order plants for

their own gardens. Some of the policemen, indeed, were, if anything, over-zealous in the performance of their duties of "pass on, pass on," as one of them wished to turn one of the Judges, an F.R.H.S., out of the tent because he ventured to take notes of the Roses after the adjudication was over.

The Roses were far superior to what we had anticipated, considering the unfavourable weather they have had to contend against, not only from the thunderstorms of the last ten days, but from the severe frosts of April and May following a very open winter.

The nurserymen, on the whole, showed far superior Roses to the amateurs; indeed, the amateurs were by no means equal to the mark, and were far behind the merit of the last two or three seasons. Amongst the nurserymen, Mr. Cant was easily first in his seventy-two with very good blooms, amongst others, of Duc de Wellington, Madame Noman, Pitord, Charles Lefebvre, Xavier Olibo, Madame Willermoz, Mrs. George Paul, Henri Ledechaux, Dupuy Jamain, Gloire de Vitry, Mrs. C. Wood, Marie Baumann, Madame Vidot, and M. Noman.

Messrs. Paul & Son were second with fine blooms of Edward Morren, better than it is generally exhibited, Duke of Edinburgh, Prince Camille de Rohan, John Hopper, Marquise de Castellane, Marie Rady, Antoine Ducher, Monsieur Boncenne, and Madame Caillat. Messrs. Paul's Roses have evidently suffered from spring frosts, as the blooms are not so good as we have been accustomed to see them of late years, especially last year, exhibited by him. Mr. Turner was third, and Messrs. Veitch fourth.

In Class 179, forty-eight varieties, three trusses of each, Mr. C. Turner, of Slough, was first; Mr. Cant, of Colchester, second; and Messrs. Paul & Son, Cheshunt, third. Mr. Turner showed some remarkably fine blooms of Paul Verdier, Baroness Rothschild, Prince Camille de Rohan, Madame Victor Verdier, Marie Baumann, François Louvat, Pitord (finer than usual), and Louis Van Houtte—one of the three blooms of Louis Van Houtte was the best we have yet seen, and we are in hopes it will prove to have a better constitution than its progenitor Louis XIV.—Duke of Edinburgh, Beauty of Waltham, Charles Lefebvre; Xavier Olibo and Horace Vernet, both very fine. In Mr. Cant's second-prize lot were very good examples of Henri Ledechaux and Dupuy Jamain, both of which Mr. Cant has exhibited this year in great perfection, Henri Ledechaux being quite distinct from Victor Verdier as shown in his stands. John Hopper, Marquise de Castellane, Marquise de Mortemart, Marie Baumann, and Baroness Rothschild were also very fine. In Mr. Paul's collection were fine examples of Miss Ingram (a pity it is so capricious), Antoine Ducher, Baroness Rothschild, Marquise de Gibot (new to us, as we do not remember to have seen it exhibited before), Marie Rady, La France, Madame Caillat, Countess of Oxford, and Pierre Notting.

In Class 180, twenty-four varieties, three trusses, Mr. C. Turner was first, Messrs. Veitch & Son second, Mr. Cant third, and Messrs. Paul & Son fourth. We will not particularise the Roses shown in these stands, for, as a rule, they were inferior to those in Classes 178 and 179, as the nurserymen had expended their strength in the larger classes, and those that were really good had been already exhibited in those classes. We shall pass over the local nurserymen and amateurs.

The prize for the best new Rose, three trusses, sent out in 1870 or 1871, was won by Mr. Cant with Countess of Oxford, fine blooms but somewhat coarse. In Class 198, twelve trusses of dark, or crimson, or rose-coloured, one variety, two very beautiful stands were shown by Mr. Cant and Mr. Turner, between which the Judges had difficulty in deciding; Mr. Turner's twelve blooms of Duke of Edinburgh being exceedingly fine, with high colour, but they had more irregularly-formed blooms than Mr. Cant's stand of Dupuy Jamain, which was one of the most glowing and fresh-coloured stands of twelve Roses we have ever seen, the petals smooth and beautifully formed, the colour deep cerise with a violet tinge.

In Class 199, twelve trusses, white or blush, the first prize was won by Mr. Turner with a beautiful box of Baroness Rothschild; the second by Mr. Cant with Devonensis, very fresh and evenly good, but not equal to Baroness Rothschild.

In Class 200, premier Rose, separately staged, the first prize was won by Mr. Cant with a fine example of the Duke of Edinburgh. The second prize was not adjudged, there being only two Roses staged, and the second was inferior to half the Roses exhibited. Perhaps the prize offered for the second—10 feet of Belvoir Castle patent plant protector—did not induce too much competition, as we perceived that in Classes 190 and 191, where the first prizes were respectively 12 feet and 6 feet of "Enville," Rendle's patent span-roof plant protector, there was also no competition.

There were two nice lots of pot Roses, twenty and ten respectively, exhibited by Messrs. Paul & Son. Class 203, for six Roses in pots, contained the worst six Roses we ever saw exhibited, and the Judges properly reserved the awards.

In conclusion we may remark, that the Roses which have come out especially strong in the two days, Tuesday and Thurs-

day, were Monsieur Noman (especially fine), Baroness de Rothschild, Marie Baumann, which was shown good in nearly every stand; John Hopper and Charles Lefebvre as usual very good, and Alfred Colomb, good but not quite up to the mark of last year; Henri Ledechaux in some instances very fine and greatly improving; Dupuy Jamin, as shown by Mr. Cant, splendid; Xavier Olibo, François Louvat, Pitord, and Pierre Notting all better than usual, and we may say the same of Prince Camille de Rohan. Weather without much sun suits all dark Roses with shades of purple. Louis Van Houtte, Countess of Oxford, Mdlle. Eugénie Verdier, La France, Madame Caillat, Marquise de Mortemart, a beautiful colour but rather too flat; Beauty of Waltham, Duke of Edinburgh, Marguerite de St. Amand, Princess Mary of Cambridge, Berthe Baron, Abel Grand, the last four shading into each other with very slight though appreciable differences. On the whole we may congratulate the donors of the £105 on the very interesting boxes of Roses brought together for competition, and hope that a supplementary Rose Show for the shilling days may always form part of the programme of the Royal Horticultural Society's provincial shows.

HORTICULTURAL CONGRESS.—JUNE 26TH AND 27TH.

At four o'clock in the afternoon of the 26th ult., a Congress was held in the large luncheon tent near the entrance, at which there was a fair attendance. Mr. A. Murray presided.

Mr. W. T. THISELTON DYER, B.A., B.Sc., F.L.S., Professor of Botany to the Royal Horticultural Society, read a paper "On Some Points connected with the Scientific Side of Horticulture." He said practical horticulturists might do immense service to science by carefully recording facts which came to their notice. As examples, he would call attention to Dr. Denny's paper on the relative influence of parentage in flowering plants. He alluded to the direct influence of the pollen upon the female plant fertilised, which had been apparently established in some rare cases by the results of Maximowicz and Anderson-Henry, and devoted some attention to the inquiry of Von Welwitsch. With regard to plant-nomenclature, he was of opinion that it required some common understanding between botanists and horticulturists. It would be very desirable to observe De Candolle's law as to species and varieties which occurred spontaneously in nature. Meteorology was a science far from yielding the practical results that could be desired from it. He must hope for improved methods for predicting weather, and for obviating its effects. As a practical point, a dry state of the atmosphere in spring was likely to be followed by frost. General Pleasanton's paper on "The Influence of Blue Light" was adverted to, and the conclusion arrived at was that the character of the views discussed in his memoir were altogether out of accord with the results at present observed in vegetable physiology.

Dr. HINDS, Professor of Botany at Queen's College, next read an able and interesting paper on "The Botany of the Neighbourhood of Birmingham." He said he proposed to endeavour to convey some general idea of the flora of the district around Birmingham, and to make a few remarks on certain conditions of the atmosphere of this large town and district, and on the influence of that atmosphere on surrounding vegetation. There was close to the town the park of Edgbaston, where many of the forest trees are noble specimens of their class. In and near the park there were specimens of the two Chestnuts, Oak, Sycamore, and others, truly noble and magnificent, and a successful general vegetation. The park at Perry Barr, or rather the ancient domain of the Scott family, presents specimens also of noble trees, and a most luxuriant general flora. About Barr and Perry Barr, and on the road between here and the western boundary of Sutton Park, are some of the noblest Beeches which the eye would wish to rest on. In the north-western neighbourhood are a series of associated localities, excited, busy, and prolific beyond conception, and known by the delightful cognomen of the Black Country. Black, indeed, was the locality, and its blackness consisted not entirely in its smoky atmosphere, though there was a fair supply of that ingredient. The ground was covered in every direction, though not with grass, and buttercups, and daisies, and trees and hedges, but with clay and cinders, and refuse coal dust. Hills and mounds of sometimes incandescent residues of iron furnaces, and yawning chasms and mouths leading down to villages and communities, and miles of space buried almost hundreds and hundreds of feet beneath the surface, met the visitor on every hand. Close in the vicinity, however, of much of this there were now and then to be seen fields of Wheat, which, though a little grimy, seemed to enjoy almost as sturdy a life as some of the rough-and-ready denizens of the district. How was it that plants could live at all in such localities as this? The reply was that the country around was simply denuded of its normal surface by the mining operations. One of the finest and most productive of the botanical stations of this district is, unquestionably, Sutton Park. It is composed of a mixture of woodland, heathy upland, bog, and lake. It is wild enough in some parts, and has an area of more than 3000 acres. The lake and the woodlands are variously disposed, divided,

and distributed. It must have been visited by wanderers amongst its scenery to the extent of hundreds of thousands, and yet there are many nooks and spots where nature seems to revel in all the luxuriance of the supremest solitude. Some of these solitary nooks seem indeed hardly to have been visited or trod by man or woman, and yet Sutton Park was accessible to every man, woman, and child whose moderate resources enabled him or her to arrive at the confines with the residue of one penny to pay for admission. With all this, then, it might be that even here in some spot,

"Full many a flower is born to blush unseen."

Sutton Park was now in tears—not tears of joy, nor even tears of sorrow for great misfortune, but tears of apprehension. Its sacred precincts had been threatened with invasion by the restless and energetic instincts of railway speculation. It is yet intact absolutely, though our worst fears for its safety and preservation are excited. Had he more time at his disposal, he might possibly have been able to say something of the low-lying district to the east of Birmingham—a watery district, and afflicted, too, by something in excess far less agreeable—he meant the sewage of this great town. He left all that to the work and wisdom of the aldermen and the socialist, and to those in the vicinity, who must be made unhappy by the very contemplation of it. Within a radius of ten miles there was a varied flora numbering 729 species.

With regard to the relation a city atmosphere holds with respect to vegetable life in its immediate vicinity, the speaker said: One of the first facts we have to meet is that we supply plants and trees with a positively enormous amount of food—that class of food from which nearly all the solid parts of plants and trees are derived. He did not refer, of course, to the water or to the ammonia, but to the carbonic acid which must be furnished in the water. Let us see what the amount is likely to be. Professor Herepath estimated that about 12·7 ounces of carbon were daily converted by an adult into carbonic acid. Professor Helmholtz, who appeared at the Royal Institution, estimated the amount as on an average about 16 ozs. Now, 12·7 ozs. produce, when oxidised into carbonic acid, about 25 cubic feet, and 16 ozs. would give more than 30 cubic feet. How many human beings, besides other animals, are living in this large town? It must far exceed four hundred thousand. Breathing an impure atmosphere is followed, in some cases, by rapid death, or, if not, by a sickly decadence. This is as effectually done as if animals were prevented from exhaling the carbonic acid from the lungs—either altogether, or else partially prevented, as human beings are when they breathe an atmosphere primarily contaminated with 5, 10, or 20 per cent. of this deadly excrementitious substance, or when the larynx or bronchial tubes are physically obstructed.

J. DENNY, Esq., M.D. (Stoke Newington), then read a paper on "The Relative Influence of Parentage in Flowering Plants." He said if they could, by the observation of results, acquire any valuable evidence indicative of the relative influence the male (or pollen) and the female (or seed) parents bear in the production of their progeny, it would assist immensely in the carrying-out of designs for the improvement in form and colour of flowers, and in the quality of fruits and vegetables. If, for instance, they could discover if either parent were prepotent in carrying to its offspring certain qualities, say of flavour and aroma, or of size and form, or of quality as regards the texture of fruits; of colour, perfume, form, substance, and the various qualities they might wish to perpetuate or modify in flowers, they would be able to form some approximate idea of the result which would follow their fertilisation. With the object of obtaining, if possible, some information regarding the relative powers the respective parents might exercise upon their progeny, he commenced a series of experiments upon the Scarlet section of the Pelargonium, and from the information thus derived he was of opinion that by careful and persistent fertilisation under the guidance of the observation of results, it was possible to produce almost any modification in the habit and character of plants, and variety of colour and form in flower. He believed it was possible to mould the character of flowers in accordance with preconceived design to a much greater extent than was generally supposed; and, moreover, he thought it possible that ultimately some insight might be obtained by these means into the laws which govern procreation in the vegetable kingdom, and which produce variegation in our fruits and flowers. The recorded influence of his crossings indicated an immense preponderance of influence over the progeny on the part of the father in all respects; in the colour, form, quality, size, and substance of the flower as well as in the production of variegation in the foliage, and in the habit and constitution of the plant also, provided always that the plants employed were of equal strength—a most important point. A close analogy seemed to him to exist between the vegetable and animal kingdoms with respect to the ill-effects produced by breeding in-and-in, and the good resulting from crossing opposites, and he traced the decadence of many of their old florists' flowers to the first-named practice.

To enable reliable conclusions to be drawn would require an accumulation of data drawn from the careful observation of very many unbiassed workers, whose results had been obtained from experiments conducted with scientific precision from all our flowers and plants. Such an accumulation of recorded facts (if they could be obtained) would prove a source of the greatest interest to the philosopher by their tendency to throw some light upon the working of Nature's laws, and could not but afford most valuable information for the guidance of the practical horticulturist, and, moreover, by freeing it from all empiricism, place it in its true and legitimate position among the modern sciences.

Mr. ROBERT FENN, of Woodstock, described a series of experiments he had carried on during the last thirty years in obtaining seedling Potatoes, and in crossing certain varieties. He tried to cross Jackson's Seedling with the old Fluke, but obtained no useful results. On trying the former with a black American kidney, out of 160 Potatoes ninety-nine were of a red colour. When proper care and skill were used in crossing, a very small per-centage only reverted to their original wild state—only twenty-five out of 1000 seedlings reverted to their original type. Unless they crossed the old varieties with seedlings they were more likely than not to spoil the breed, but to preserve the shape of the produce it was always better to cross kidney with kidney, and round with round varieties.

Professor W. T. DYER read a paper by Mr. J. Glaisher, F.R.S., of the Royal Observatory, Greenwich, "On Some Thermometers for Horticultural Use." He submitted three instruments prepared under his direction, the first provided with a bayonet for determining the temperature 1, 2, and 3 inches above soil; also, a dry and wet bulb thermometer, the difference between the two showing the amount of moisture, and worthy of particular study during the sudden alternations of temperature in the spring. These were all cheaper than the ordinary thermometers, and their accuracy guaranteed by Mr. Glaisher to two-thirds of a degree.

Professor DYER also read a paper by Mr. J. G. Baker, F.L.S., Assistant Keeper of the Kew Herbarium, "On *Dracæna* and *Cordylina*."

Mr. FORREST read another paper, by Mr. C. Roberts, F.R.C.S. (communicated by Dr. M. T. Masters), "On Sulphozone," a preparation which had been found very effective for the destruction of mildew and blight found on Vines, the Hop plant, Roses, fruit and other trees, without injury to the produce or the plant. It was also a very good disinfectant and deodoriser, and was useful for medical, veterinary, and sanitary purposes.

Professor DYER read a few words written by Mr. J. Pearson, as an addendum to his pamphlet "On the Origin of Canker in Fruit Trees." Subsequent experiments, and the testimony of competent authorities, had amply proved the truth of his conclusion, that the general cause of canker was water, a discovery which had been rendered very useful by the adoption of various contrivances to keep moisture from young delicate wood. This course had been invariably successful in preventing canker.

The second day's Congress was held in the luncheon tent at four o'clock. The Earl of Bradford, who had been announced to take the chair, was absent, and Professor Thiselton Dyer presided in his place.

The first paper was read by Mr. T. MOORE, F.L.S., Floral Director of the Royal Horticultural Society, on "The Recent Progress of Practical Horticulture." The paper was an enumeration of the principal new flowers, with remarks upon their qualities and horticultural rank. It also included criticisms on newly-introduced trees, fruits, and vegetables. The employment of glass, he said, was now necessary to enable the gardener to make something like sure of a crop of fruit [hear, hear], and whatever protection was needed should be ungrudgingly provided.

Mr. W. PAUL, F.R.H.S., read a paper on "Form in the Tree Scenery of our Gardens, Parks, and Pleasure Grounds." He divided trees, for the purposes of the paper, into the following representative classes:—1, Irregular; 2, Round-headed; 3, Laminate; 4, Columnar; 5, Weeping. He condemned the planting of trees in an unmeaning jumble, with no guiding principle in planting, and pointed out in what situations trees of the kinds which he had indicated could be well employed. In the course of the paper he said that when planting in the vicinity of a dwelling-house, whether it was a mansion or a cottage, they often found themselves under considerable restraint, because the form of the trees required to be in harmony with the character of the building. It might not be necessary to consider every order or style of architecture as requiring a different assortment of trees; it sufficed to divide the whole into Perpendicular, of which the Gothic might be given as an example, and the Horizontal, which was fairly exemplified by the Italian style. Irregular, round-headed, and weeping trees were in character with either; but the laminate and round-headed were, to his mind, the most pleasing in connection with the perpendicular, and the columnar and irregular with the horizontal. If the building were low, tall-growing trees should be avoided, and the round-headed, the laminate, and the weeping were especially desirable, because they directed the eye horizontally and downwards. It should

ever be borne in mind that the presence of lofty trees in proximity to a low building had the undesirable influence of still further depressing it.

Mr. P. GRIEVE read a paper, entitled "Hints on the Formation and Arrangement of Shrubberies," in which he advocated the planting of fruit trees in pleasure grounds, instead of disposing of them in the kitchen garden, where their beauty was spoilt by inharmonious surroundings; or in the orchard, which was generally in an out-of-the-way-place.

The Rev. C. P. PEACH read a paper on the subject of the bedding-out system, which we give *in extenso* in another page.

Mr. J. CROUCHER read a paper on "The Cultivation of *Stapelia*s."

The CHAIRMAN next read a paper sent by Mr. G. Westland, "On the Future of our Fruit Crops." The writer began by stating that the taste for fruit and the demand for its supply were notoriously increasing. His object, therefore, was to ask how more could be obtained. Looking back to the orchards of the midland and cider counties, and taking into consideration the sacks, or even cartloads, of fruit which hundreds of trees individually produced, he inquired whether the dwarf system, which had been pursued for the last quarter of a century, though pretty so far as it went, was not a blunder with reference to the supply of the markets and the mouths of the millions? Fortunately, market and commercial growers had not been misled by the pretty deception, but had stuck to the old standard form, guiding, not restricting trees, and they gathered fruit accordingly. No scheme ever led to more disappointment than the pinching and root-pruning systems of cultivation. Such trees made pretty objects in a garden, and they were especially pretty when full of fruit; but that was so rare an occurrence as only to be regarded as the exception, and not the rule. Such being the fact, it appeared that the only sure way to increase the market supply was to go back to the good old plan of planting orchards, not by scores or hundreds of trees, but by scores or hundreds of acres. Of the propriety of planting hardy fruits to a very large extent there could be no question, so long as the varieties had the qualities of abundant bearing and flavour, and if necessary, suitability for kitchen use. Plant no inferior fruits, nor any that were not known to be suitable to the locality, unless an odd one for the sake of trial. Again, in unfavourable localities for fruit-growing, there were certain spots which might be planted with a fair chance of success. Shelter, of course, was a great point, but the shelter of walls was not so good as the shelter of a belt of evergreen trees. Spring frosts were the greatest drawbacks in fruit-growing, and therefore plants when frozen should not be exposed to the morning sun. The writer objected to pot culture as only suitable for amateurs; growing plants in pots would never be a source of supply of fruit. He also condemned garden walls, as a crop once in five years was the full average of wall trees, and therefore the return was not worth the trouble and expense of management.

Mr. W. E. RENDLE read a paper "On the Use of Glass and Other Protective Materials in Horticulture." In cold countries, he said, experience had proved that modern notions of gardening could not succeed without the help of glass. During the last two seasons especially, the frost and snow had destroyed great quantities of Peaches and Nectarines, and since the heavy duty on glass had been repealed there was no reason why it should not be extensively used for horticultural purposes. The immense value of glass had only been discovered within the last few years, and instances were quoted by Mr. Rendle to show its practicability for the protection of fruit as well as flowers.

Mr. SHIRLEY HIBBERD also sent the following paper on ALPINE PLANTS.—The increasing taste for the cultivation of Alpine plants will, it is hoped, justify the presentation to this Congress of a few remarks on their origin, their characteristics, and their cultivation. Current books on the subject contain but little useful information of a general kind, however valuable they may be to the collector as indicating species and varieties that are especially worthy of his attention. As I approve most heartily of the restrictions placed upon contributors as to the time allowed for the reading of these papers, I shall beg of those who favour me with a hearing that I may here conclude my preface, and make the briefest possible statement of the facts and opinions it appears necessary to adduce in elucidation of the three divisions of the subject selected for present consideration.

As to the first section of our theme, it appears to be necessary first to agree that we do not seek for the plants or for the explanation of their origin on the Alps alone. When we speak of Alpine plants, we have in view the vegetable products of mountains without regard to the especial flora of any particular peak or range. The Alpine garden of the British horticulturist may be as consistently furnished with gatherings from the Carpathians, the Pyrenees, the Rocky Mountains, and the Scottish Highlands, as from the Alps alone. But when we consider our collections collectively we find that they possess many features and characters in common, and perhaps the most universal and constant of their peculiarities is their capability of resisting and, indeed, of prospering under exposure to long-continued cold.

Their home is amid the "thick-ribbed ice" and everlasting snows. Except when the snows shelter and hide them, they are subject to the influence of intense solar light and a highly rarefied atmosphere, more frequently and more heavily charged with moisture than the air of the plains. When we make an analysis of the genera comprised in a fair selection of Alpine plants, we shall find no hint of morphological or biological relationship. We may group them as Alpine plants, and there is an end of all attempts at classification; for they include shrubs and herbaceous plants of families widely separated by every recognised system of botany. But species of the same genera often occur on widely-separated mountain ranges, and this fact surely affords a hint of a common origin. Now in respect of the European mountains and those of northern Asia, a considerable proportion of the plants met with in their higher altitudes, and especially such as haunt the snow line and the neighbourhood of glaciers, are again met with on the plains and lower slopes of the Polar regions of the north. Between the Alps and the Norwegian mountains there are extensive plains, which, measured by a direct line on the map, separate them by a distance of 800 miles. Yet here the Alpine flora is in great part repeated, and thence through northern Lapland and Siberia, and further north still, the same plants occur, apparently rejoicing, and certainly thriving, in climates so rigorous that both their animal and vegetable products are restricted to a comparatively few types, and these adapted by constitution and conditions least favourable to organic development. Where earth and sea are icebound for eight or nine months in the year, and the coasts are blocked with icebergs during the few long days of summer, these plants hold their own with wonderful pertinacity, and in their short season of continuous sunlight make the dreary landscape smile with their fresh green herbage and their lovely flowers. It is impossible to avoid the suggestion of the coincidence that these hardy plants owe their origin to conditions formerly subsisting between the far-removed Alpine and Polar regions, but which long since ceased to exist. May we not, therefore, say that in all probability the Alpine flora is (to use a geological phrase) an outlier of an ancient Polar flora, and a witness to-day of the glacial era, when the northern parts of Europe and America were covered with fields of ice? The probable common origin of Alpine and Polar plants was long ago suggested by Professor Schouw, in his "Earth, Plants, and Man;" but it has been lately considered in a more systematic manner by Dr. A. Pokorny in his "Origin of Alpine Plants."* The first cited of these writers observes that "the Polar flora, or, as we may term it, the Alpine flora, is not merely met with in the higher regions of the Alps—the highest mountains in Europe; it is found everywhere in Europe, and the northern parts of Asia and America, where mountain masses present themselves high enough to furnish a suitable climate to these plants in their more elevated districts. Hence we find this flora in the Pyrenees, in the Sierra Nevada, the Carpathians, and the Caucasus; in the Norwegian, Scotch, and Icelandic mountains, and traces of it are seen on the highest peaks of the Apennines and the Grecian chains; it is also seen on the Altai and other Asiatic mountains, and on the higher chains of North America." To find an explanation of the relation of these far-separated floras, we must without doubt go far back in time, and endeavour to picture the northern continents as they must have appeared in the glacial era. Then, indeed, the mystery appears to be solved. We find on the Faulhorn, at an altitude of 8,000 feet, 135 species of flowering plants, of which forty are found also in Lapland, and eight in Spitzbergen. In Saussure's "Garden of the Glacier," in the middle of the Mer de Glace of Mont Blanc, at an altitude of 9,000 feet, may be found eighty-seven species of flowering plants, of which twenty-four are also found in Lapland, and fifteen in Spitzbergen. The distribution of land and water has undergone vast changes, the great plains of Europe now separate districts that were united by fields of ice, and the Alpine and Polar floras are put so wide apart that unless we had abundant testimony of their former unity, the hypothesis of a common origin would not be worthy of a moment's attention.

When we investigate the relationships of Alpine plants among themselves, we find as above remarked, no distinct physiological, botanical, or morphological intimacies. For this reason, it is, perhaps, that writers on Alpine plants have been careful to avoid the important question of their direct relation to the peculiar conditions under which they are produced. What are the proper characteristics of Alpine plants? We shall find no answer to the question in the books, for our friends who teach us how to select and cultivate them confound the products of different zones, and are as ready to regard Pines, Firs, and Larches as Alpine plants as to place in that category the Soldanella, the Silene, and the Androsace. The fact is, we have nothing to do with trees, shrubs, or grasses in this connection. We must ascend towards the snow line to find those plants of low cushion-like growth, producing comparatively large flowers notable for the purity of their colours, to

which alone the term "Alpine" can be properly applied. And when we find them, we are at once struck by certain characteristics of growth and aspect, which are the evident analogues of the circumstances governing their development. In other words, they are related by their adaptation to their silent homes, where winter rules nine months in the year, where spring is characterised by frosty nights and changing days, in which sunshine and shower are ever contending, and where summer and autumn are unknown.

We dismiss all trees and shrubs from our consideration and ask again, What is an Alpine plant? It is not an annual. If an annual were lodged on the bleak mountain top it could not perpetuate its race, for it could not have time to ripen and distribute its seeds. All Alpine plants are of necessity of perennial duration, herbaceous or sub-shrubby, and of close stunted growth. Their growth in height is restricted by the rigours of their Polar clime, and their frequent and long-continued covering of snow favours a lateral extension and promotes the close turf-like habit common to them all. It is especially worthy of observation that we rarely meet with hairy or downy plants on Alpine heights, and never with examples of spines or thorns. In Professor Schouw's enumeration of the characters of these plants he remarks, "that moist soils produce smooth plants, and dry soils plants furnished with hairs and thorns; since, therefore, the soil in which Alpine plants grow is kept constantly moist by the flowing down of melted snow, we see in this the reason of that peculiarity."

It is equally consistent with their conditions of life that they should be strangely sensitive to any increase of temperature above the freezing-point. The first loosening of their icy bonds is followed by an awakening of their energies, and they burst into flower with the earliest encouragements of the kindly sunshine that ushers in their brief season of activity. Their early flowering promotes the ripening of their seeds ere winter seals them up again, and, indeed, none but early-flowering plants are capable of permanent existence in a climate characterised by almost continuous winter. The low temperature of the higher Alpine regions sufficiently accounts for the absence from Alpine flowers of honey and fragrance, and, it may be added, of poisonous secretions; yet from many of them cattle derive subsistence; and from a few we obtain bitter extracts that are serviceable as medicines. There remains, indeed, but one prominent peculiarity which appears to be inexplicable as a necessary consequence of the circumstances by which these plants are surrounded, and that is the comparatively large size of their flowers. Their pure colours we may reasonably associate with the intensity of solar light they enjoy in their short season of growth; but why their flowers should as a rule exceed in size, proportionately to the plants producing them, those of their nearest relatives of the plains, is probably at present beyond our means of determining.

It may be said that these considerations are without interest for the so-called "practical" man. The creature who rejoices in this designation may take his own course, and despise everything in the nature of scientific inquiry; but if he will not heed these matters he can never make fair progress in the cultivation of Alpine plants, and had best, therefore, reserve his practical skill for the hewing of wood and the drawing of water, or any other occupation that may be carried to a successful issue in ignorance of the ways and works of Nature. The cultivation of Alpine plants must be founded on a clear perception of their requirements, for they will not alter their nature to please us. Now, it must be confessed that the difficulty of providing for their requirements presents an insuperable obstacle to their general diffusion in English gardens. It is the business of this paper, however, to indicate how, to a certain extent, difficulties may be overcome, so that those who would for their pleasure establish Alpine gardens may be encouraged in the commendable enterprise.

The Alpine garden will include many plants that require no particular care, and that, indeed, have long since been naturalised in our parterres and borders. But it will also include a number of exquisitely beautiful subjects of a most untractable nature, and for these we must make careful provision. It is obvious that for their especial benefit our efforts should be directed towards the establishment of the coldest possible local climate. The "cold shade of the aristocracy" will not avail much, but an extensive rockery, containing a great bulk of material, and ranging generally east and west, with deep inlets on the northern side, will afford a choice of aspects; the sunny side for the free-growing rock plants with which we are most familiar; and the shady side for the more fastidious of our genuine Alpine flowers, that are usually killed out when subjected to the ordinary influences of our climate.

It is particularly worthy of notice that a constant flow of water, however minute in quantity, exercises a powerful influence in cooling the surfaces over which it flows. The water should flow from the highest parts of the rockery in the thinnest possible film over the greatest possible extent of surface. A simple rill will be comparatively useless, and the same may be said of a

* De l'Origine des Plantes Alpines. Paris, 1871.

fountain bubbling from the rock. For purposes of ornament, however, these features may be added, and they may indeed be made much of by planting near them subjects adapted to afford suitable garniture. But for maintaining a constantly moist condition of soil, and reducing the temperature of the whole mass to the lowest degree possible, the water should rather be spread in a sheet than accumulated in rivulets or pools. It is by favouring evaporation that the cooling effect is obtained; and if the rockery is constructed of a porous stone or any other suitable material of a porous nature, the evaporation will be increased, greatly to the benefit of the plants. All cements and vitrified masses are objectionable, because they neither absorb moisture nor promote evaporation, and therefore should be employed as little as possible, and it will always be better if they are not employed at all.

On the construction of rockeries and the selection of plants, ample and trustworthy directions may be found in the books. The object of this paper is to supplement the labours of writers on Alpine plants by considerations that have not been entertained by them. We may therefore pass to the consideration of another method of growing Alpines, which has not as yet obtained the attention it deserves, and in respect of which the writer has had ample opportunity of testing its efficiency.

It may appear paradoxical to propose to grow these plants under glass, and yet when this method is properly conducted the most happy results may be ensured. We need low-roofed, unheated structures, with substantial brick foundations and large beds of soil, supported by brick walls in place of ordinary stages. By means of free ventilation the plants may always be kept as cool as the climate will allow, and they can be protected against those destructive alternations of temperature which characterise the early months of the year, when, lacking their proper covering of snow, they are apt to be forced into growth prematurely, only to be suddenly shrunk up again by biting east winds, or washed away by a deluge of rain at the moment of attaining to the full display of their beauties, as though blessed by the brief spring-time of their native heights. As our summers are too long and too warm for Alpine plants, so our winters are too short and too changeable, and it cannot be doubted that the visitations of genial weather we are accustomed to in the early months of the year are as injurious to Alpine plants in the open air as any of the many adverse influences that assail them in our gardens. For the structure which we shall designate the "Alpine house" selection should be made of Alpine plants that are especially adapted for pot culture. Their name is not *Legion* perhaps, but enough may be found to afford in the spring season a display at once attractive and unique, and the more acceptable to the amateur because, being flowered under glass, they may be enjoyed on dreary days when "the winds whistle and the rains descend." This method of providing conditions suitable to Alpine plants is attended with the advantage that it enlarges the field of spring gardening, for not only Alpines proper, but a multitude of exquisitely beautiful hardy plants that are usually too much buffeted by our unkind springs may be cultivated with them, and the result may be a widely-varied display, perfect in all its features, in a season when the garden presents scarcely one green leaf or one bright flower to mitigate the misery of drenching rain and easterly winds.

Should the taste for Alpine flowers continue to extend as it has done during the past few years, the Alpine house will become a necessary and acceptable institution, and probably will acquire an importance equal to that of any other of the many contrivances adopted in connection with decorative horticulture.

THE HORTICULTURAL DINNER.

On June 27th many of the exhibitors, gardeners, and members of the Local Committee dined together at the Holte Hotel, Mr. W. Marshall, F.R.H.S., presiding.

The CHAIRMAN having given the usual loyal toasts,

Mr. LOWE gave the toast, "The Royal Horticultural Society." He had no hesitation in saying that the visit of the Society had conferred upon Birmingham and the district a very large amount of substantial benefit. The visitors had seen one of the most magnificent exhibitions ever held in this country, and the inhabitants of Birmingham generally had great reason to thank the Society for giving them an opportunity of seeing something which they scarcely expected ever to see in the town. The Show had certainly been a great pleasure and a great benefit to the inhabitants of the district; Birmingham had long wanted in its midst horticulture of a high-class character; it had obtained it at last; and, individually, he thanked the Royal Horticultural Society for its visit. [Hear, hear.] That the visit was appreciated was evident from the fact that that day (June 27th) between 25,000 and 30,000 persons had visited the Show; and nearly 20,000 had paid at the gates. [Applause.] The Prince had remarked, and truly, that the artisans of the locality, as a rule, were fond of gardening. The visit of the Society was calculated to develope and foster this taste, and in this development lay a great public good. [Cheers.]

The CHAIRMAN, in response, said that the visit of the Society to the town had been undertaken purely and entirely with a view

to promoting the interests of horticulture in all its branches. At the commencement of the negotiations there was some difference between the Society and the Local branch, but he was glad to say that when it was pointed out that it was impossible for the Society to do anything in the way of implements, the Local Society readily accepted the explanation, and all the arrangements had been carried out with the greatest satisfaction to everybody. He was compelled to say that the Society occasionally had a good many hard names thrown at it, names which were not deserved; but he could truly say that the object of the Council had throughout been to advance the interests of horticulture, and to meet, if possible, the wishes of exhibitors of all classes. They could not expect that a Society which, very few years ago, had been in straitened circumstances, should be as liberal as everybody might desire; but he was glad to say that the Society was now in a much better position than was the case some time since, and he had no doubt that, in the future, it would be able to offer much more liberal terms to exhibitors. He, for one, should be the first to propose this. [Cheers.] He need scarcely say to an assembly so well acquainted with the matter as that which he was then addressing, that but for the assistance rendered by the Local Committee the success of the Show would have been very much curtailed. [Hear, hear.] He believed something like £4000 had been received up to the present moment; of course the expenses, in consequence of the weather, would be considerable, and would appreciably reduce the amount in hand, but at the same time there was very little room for dissatisfaction. In conclusion he proposed "The Health of the Local Committee."

Mr. LOWE, in responding, said that the Local Committee was one of which the Society might feel justly proud. Its members were satisfied and gratified if, as the result of any exertion of theirs, the Exhibition of the Society had been made a success, believing as they did, that such exhibitions did very much to advance one of the most intellectual and beneficial pursuits in which men could engage.

The CHAIRMAN proposed the "Exhibitors and Gardeners of Great Britain." In looking round the room there would be some difficulty in selecting anyone who was not an exhibitor. This was very gratifying, but the only misfortune about it was that exhibitors did not always recognise the advice of Dr. Watts, to the effect that birds in their nests should agree. He really could not see why there should be any hair-splitting or squabbling about small matters amongst horticultural men; and recognising the harmony with which the arrangements of the present Exhibition had been conducted, he trusted that the precedent now set would be followed in years to come.

Mr. BADGER, who was received with cheers, proposed the health of Mr. Richards, the Assistant Secretary to the Royal Horticultural Society. He spoke in eulogistic terms of the ability, courtesy, and efficiency of Mr. Richards, saying that he (Mr. Badger), in all his communications with the Royal Horticultural Society and its officials, had been met with the utmost fairness and goodwill. In fact, his connection with the Society had been one of unmitigated pleasure.

The CHAIRMAN proposed the health of Mr. Badger, and

Mr. BADGER, in responding, said that the Birmingham Horticultural and Botanical Society, from which the Local Committee might fairly have expected to have received active aid in the arrangements for making the Show a success, had thrown every possible obstacle in the path. From the very moment that the announcement was made that the Royal Horticultural Society intended to visit Aston Lower Grounds this local society raised every possible objection to it, and it would therefore be seen that the Local Committee, in carrying on their work, had at least one serious obstacle to contend with. The Local Committee was one such as he ventured to say had never been associated with any horticultural exhibition before. It included representatives of almost every class of society in the midland counties, and amongst those who had written to him expressing their cordial sympathy with the objects of the Society was Mr. John Bright. [Applause.] From his connection with the Society he could say in all sincerity, that it fully deserved the unswerving support of all horticulturists.

Mr. BRAGG proposed "The Press," and Mr. Moore, co-Editor of the *Gardeners' Chronicle*, responded; Mr. SCHOFIELD gave "The Health of Mr. Thistleton Dyer, M.D., Professor of Botany to the Royal Horticultural Society," and Mr. Dyer responded; the CHAIRMAN proposed "The Health of Mr. Quilter," and Mr. Quilter appropriately replied.

[In our next number we shall give a report on the implements, &c.—Eds.]

POLES.—No. 2.

SEAT OF ROBERT HANBURY, ESQ.

LEAVING the plant houses to take care of themselves—and they can take care of themselves, or, rather, are well cared for—we will now pass to the rosery, of which the accompanying



The Rosery, Poles.

is an illustration. Years ago we visited the place, years ago we were charmed with it, and now we have grown older and colder we are charmed with it still. *On revient à ses premiers amours*. So it is with us. The place as we viewed it a few days ago is not much changed; we shall therefore use the words we wrote seven years ago, and which are as descriptive now as they were then. In front of the conservatory runs a terrace, overlooking a rosery, which is planted with a good collection, consisting of Hybrid Perpetuals, whilst Tea Roses are trained against the 6-feet-high terrace wall. The centre of the rosery is formed by a pedestal encircled by quadrant beds, then a circular walk, and exterior to this twelve other beds converging towards the centre, the whole being surrounded by four borders separated from each other by the four principal walks, which meet in the centre. Above, on the terrace, there are twelve beds on each side of the walk, six oblongs with the corners swept out alternating with the same number of circles, and the whole planted with standard Roses.

Passing over the plant houses from which Mr. Hill has so frequently and so well exhibited at the metropolitan shows both Orchids and Ferns—passing over also many other fine features of this place, we come to the fruit and kitchen garden, which covers a space of five acres, of which two acres are enclosed by walls 15 feet high, built hollow on the same plan as those at Chiswick, which, unlike other forms of hollow walls, have exactly the same appearance as a solid one. The wall on the south side is 300 feet long, giving of course 300 feet of south aspect and a corresponding extent of north aspect; and at right angles to this wall run two others, and one dividing the enclosed space up the centre. Each of these is 240 feet in length, and the whole, consequently, give 720 feet of west aspect and a like extent of east aspect. The borders are 15 feet wide, and variously cropped to within 4 feet of the wall. The south aspect is covered with Peaches and Nectarines. The trees were chiefly Grosse Mignonne and Barrington Peaches, and Violette Hâtive Nectarines, and were all in excellent bearing condition. But it was on entering the walled-in garden that we were more especially struck with the appearance of the trees. The walls were literally covered with blossom, and the trees in a healthy bearing state from top to bottom. The north aspect is chiefly occupied with fan-trained Plums and Cherries, the former consisting of Coe's Golden Drop, Magnum Bonum, Angelina Burdett, Kirke's, Orleans, and Victoria; the latter of Elton, Black Tartarian, and Morello, one tree of which alone extends over a width of 25 feet. The east and west aspect walls are covered with excellent horizontal-trained Pear trees of the best varieties, as Duchesse d'Angoulême, Louise Bonne of Jersey, Glou Morceau, Thompson's, Althorp Crasanne, Josephine de Malines, Easter Beurré, &c., Plums, and Cherries. Along that side of the walks farthest from the wall, at 6 feet from the edge, are planted about two hundred pyramid Pears, from 12 to 18 feet apart. These were all root-pruned two years ago, and were, like those on the walls, white with blossom. The interior was variously cropped with Peas, Carrots, Cauliflowers, Asparagus, and other vegetables, and the supply is supplemented by the produce of the outside slips, in which there are standard Apples, Plums, and other fruit trees.

We now come to the south-aspect wall on the north side of this garden. Here there are four vineries each 30 feet by 15 feet, and a Peach house 40 feet long by the same width. In the first house, heated by five rows of 4-inch pipe, were fine crops of Black Hamburgh, Trentham Black, Muscat Hamburgh, and Frontignans, and in a succession-house Black Hamburghs, Lady Downe's, and Muscats in pots, the two former having set a good crop, and the last being just started. The fourth vinery was a Muscat house, in which fresh Vines had been planted to replace the old. The most pleasing sight, however, was the Peach house, the roof being covered with two fine trees bearing a profusion of fruit.

A span-roofed Peach house, formerly an orchard house, but not heated, 36 feet long, 18 feet wide, and 10 feet high to the ridge, was also planted with Black Hamburghs and Buckland Sweetwater Vines trained along the ridge, whilst on shelves were numerous pots of Sir C. Napier and Premier Strawberries, bearing very freely. A second span-roof was devoted to Figs well set with fruit, the kinds being chiefly Brown Turkey, White Ischia, and Early Violet, which produces a small sweet fruit, is a very free bearer, and excellent for forcing. Other houses contained pot Vines started to come in at Christmas, Bowood Muscats just colouring, Oranges in pots grown chiefly for their flowers, good crops of Strawberries, Kidney Beans,

and Cucumbers. Of the last Mr. Hill has a very prolific variety of his own, raised by him several years ago between the Manchester Prize Cucumber and Black Spine. The fruit averages 18 inches long, and is produced in twos, and sometimes three or four at a joint.

At the back of the north wall of the kitchen garden were the men's rooms, not the small, low, dark, and badly-ventilated rooms too commonly met with, but 14 feet square, and 9 feet high, heated by hot water, and with ample provision for air and light. Where there is such a liberal employer as Mr. Hanbury, and such a zealous and well-skilled servant as Mr. Hill, great things may be expected; still we were not prepared to meet with such high-keeping and thorough efficiency in every department. Everything that was done was well done, and it is no exaggeration to state that there was not a weed to be seen.

We ended our last notice with "weeds," and to them we have returned; as we said seven years ago so we say now—"There was not a weed to be seen."

ROSES.

The Roses previously recommended by me have been blooming well—namely, Perfection de Lyon, Edward Morren, Madame Chirard, Marquise de Castellane, Baron Chaurand, Felix Genero, and Lord Herbert quite first-rate. They are a splendid lot.

I have only just bloomed Leopold II. (W. Paul). It is a magnificent Rose, and of excellent growth and habit. It is full-sized, well-formed, and of a brilliant scarlet-crimson colour. All comers made a "note" of it.

I recommend to window-gardeners Baroness Rothschild, Triomphe de Caen, Princess Christian, Madame Creyton, Marquise de Mortemart, and Baron Chaurand.

The Roses here (Dorset) are healthy, and blooming well. I have cut them all back three times, some of them four times, since Christmas. By so doing I have got rid of orange fungus for the year. Cut away all damaged and inferior wood; you cannot get good wood out of bad.—W. F. RADCLIFFE.

EXCRESCENCES ON VINE LEAVES.

We have recently received from several correspondents examples of Vine leaves, the under surfaces of which are a mass of warty-like excrescences, resembling small green boils or blisters, so thickly clustered together as to completely obliterate the natural surface of the leaves. From others we have had communications describing this disorder, with inquiries as to its cause and cure; and we have recently seen some vineries in which the growth of the Vines has been seriously checked by an aggravated form of the same affection. This disordered state of Vine leaves, it need scarcely be said, is not by any means of recent date, nor altogether peculiar to this season. At the same time we are not at all surprised at its prevailing to an apparently unusual extent in a season so characterised by sunlessness and wet as this has been up to the middle of June.

The disorder in question we have noticed to have been a complete puzzle to men who have never had an opportunity of practising Vine culture, nor of testing the causes that have been assigned for those excrescences. At one time it has been assigned to one cause, while at another several causes have been suggested, and remedies proposed which could neither prevent nor remove the evil. Indeed, we are not aware that, after it once appears, it can be removed, although it can be prevented and arrested.

In so aggravated a form of this disorder as prevails in so many cases this year, it has a most injurious effect on the growth of Vines. In fact, we have seen cases where it has completely arrested the growth of especially young Vines. Last year a large closely-glazed house of pot Vines came under our notice, where the Vines were so much affected that the leaves were not half their natural size—were cup-shaped, and so inveterately affected by this extravasated state of the sap, that every leaf was four times the thickness that is usual in a state of health; and a general stunted growth and yellowish green colour prevailed over the whole house. The cause was not far to seek for: the means of ventilation in an otherwise excellent structure were sadly deficient, and the floors and borders were kept in a constantly saturated condition by frequent sprinklings. So confident are we of the cause of this undesirable disorder in the leaf of the Vine, that we will undertake to pro-

duce it in ten or fourteen days in the earlier stages of the Vine's growth, and more especially during a sunless and wet season like the present. The agency we would apply is neither more nor less than a warm atmosphere highly charged with vapour or moisture, in conjunction with a minimum of ventilation. This produces it to a certainty; and in vineries where the ventilation is ample and the atmosphere not over-moist, it will not appear, although in such a season as this it requires careful management in the points named to prevent its appearance. Ventilation and dryness will not eradicate the disorder once the leaves get into the spongy blistered state; but these conditions will arrest its spread when it has commenced, and prevent it where it has not. Our theory of the matter is, that with a close over-damp atmosphere and a high stimulating temperature surrounding the foliage in the absence of sunshine, and while the roots are active in a moist border, too much sap is sent up, which, in the absence of a corresponding amount of evaporation and other functional operations of the leaf, ruptures the sap-channels or veins of the leaf, and as a consequence the crude warty matter is formed in the leaf. This takes place more in the centre of the leaf, and its expansion—except towards the margin—becomes arrested, and it assumes a cup form. In one instance this year we have seen several leaves from the back of which an attempt was made to form small leaflets just where the excrescence was the thickest.

Our present closely-glazed hothouses are more favourable to the production of this disorder than were the older ones, with their many open laps and chinks for the escape of moisture and the ingress of fresh air, and require more than ordinary care in keeping up a constant circulation of fresh dry air to guard against the evil in question, as well as to produce a healthy foliage of that consistency and texture which is indicative of functional regularity. Whenever the first signs of these warts appear, let it be the signal for increased ventilation and decreased atmospheric moisture.—(*The Gardener.*)

ONE HOUSE FOR FRUIT AND PLANTS.

We would direct the attention of "S. K." (a correspondent) to the article at page 463, as there he will find much that will meet his case. To be more precise: "S. K." may combine plants and flowers in such a house, but to do much with plants these should not be too much shaded. Six Vines will be ample, and five would be better. One could not in such a house have a better variety than Black Hamburgh for the main bulk, with one Buckland Sweetwater Vine and one Royal Muscadine. Of course by giving more heat any kind could be grown. These will ripen well without much artificial heat.

If plants are grown in the house we have not much faith in the Strawberries doing well on the back border. They would thrive better on the front shelf. If fruit were a consideration there might be Peaches on the back wall; if flowers were the object it might be clothed with Camellias and Oranges, and the shade of the Vines and the additional heat in summer would be conducive to their success. After the Vine leaves were ripe there would be a rich back wall to look at. If small plants were the object, or even if the greatest possible quantity of Strawberries, we would make a steep stage against the wall. The service of that stage would, however, be reduced to a minimum when the Vines began to shade the house. One cannot, in a small house, have every advantage. As a general rule, with the exception of Mosses, Ferns, &c., plants will not long thrive without a fair portion of light. By moving plants out much may, however, be done in a small house. In such a case, if we were to combine Vines and flowers, we should plant Vines as proposed, clothe the back wall with large Camellias planted out, and then have such subjects as Epacris, Azaleas, Cytisus, Primulas, and Cinerarias.

For treatment we recommend the "Vine Manual," which can be had by post from our office for 2s. 7^d.

As respects heating, we have little faith in any of the modes proposed. First, there is a stove which it is proposed to fix in the house, to be fed from an outhouse, but the heat to descend and to pass under the pathway in a flue for the length of the house, and then to rise and go into a kitchen chimney. We should not envy anyone if shut up in the outhouse and vainly striving to make the flue draw. The whole thing is considered by the most practical as contrary to natural laws. Besides, anyone who has read carefully our pages would have perceived that one secret of good draught in such stoves is, that the horizontal pipe from the stove must be short, not

more than from 2 to 3 feet. Of course, if the rise of the pipe or flue is rapid the length does not so much signify. In this case "S. K." attempts to bring the heated air down under the pathway.

There is just one favourable condition—that is, the height of the kitchen chimney, and the higher the better. A second thing would be, not merely sinking the stove as much as practicable, but having a close chamber over it, in which the heat should rise before descending to the lowered flue. When that flue became a little heated, the tall chimney would act in securing draught and combustion. In a parlour of a public-house in a neighbouring market town, we saw an open iron stove that is with the firebox exposed, as in a common grate, only the stove stood in the middle of the room without any apparent chimney. The smoke rose into what seemed the top of the stove, and an opening there brought the smoke down by the back of the stove into a flue underneath the floor of the room, the floor of some passages, and beneath the floor of a large kitchen, from whence it rose and passed into the kitchen chimney. The high warm chimney was the chief cause of draught. Under similar conditions we should not despair of success; but without the high heated chimney, and without taking means that the heated air should rise first, we have no faith in the proposed plan acting.

The second proposed plan is just as objectionable. The flue taken from the kitchen fireplace going along the house and returning, supplied with dampers, &c., would answer, but for the simple fact of the flue, after entering the greenhouse, having to descend.

For such a small house, 21 feet by 10, and where it was merely wished to keep out frost, the simplest plan would be to place the stove as proposed. If a brick one, it will be better than iron, so that it can be fed from the outhouse, and just take a pipe for smoke from the stove right through the roof of the house. With close-fitting furnace and ashpit-doors you can regulate draught to a nicety. Thus no flue will be needed.

If the stove were placed as R. F. near the kitchen chimney, the smoke-pipe could be at once taken into the chimney. There is just this thing necessary, the pipe should go in from 5 to 10 feet above the fireplace in the kitchen so as to avoid back draught.

The next simplest and a better mode would be to sink a small stove-hole, have there a furnace and a flue from it underneath the floor, the flue terminating at the stated height in the chimney. We would rather like "S. K." to try his own plans and report the result, and to do that whatever plan he may adopt.—R. F.

BALCONY GARDENING.

No more decisive evidence occurs to us of the increased and increasing love for gardening than the multitude of inquiries for plants suitable for cultivation in a balcony. We have our own chosen ones, and we have our own preferred arrangement, but we ask from our readers the communication of the results of their own experience as to which plants should be selected, how they should be cultivated, and how arranged. There is only one circumstance from which we think no variation is permissible—the plants must be either grown in boxes, or in pots plunged in boxes.

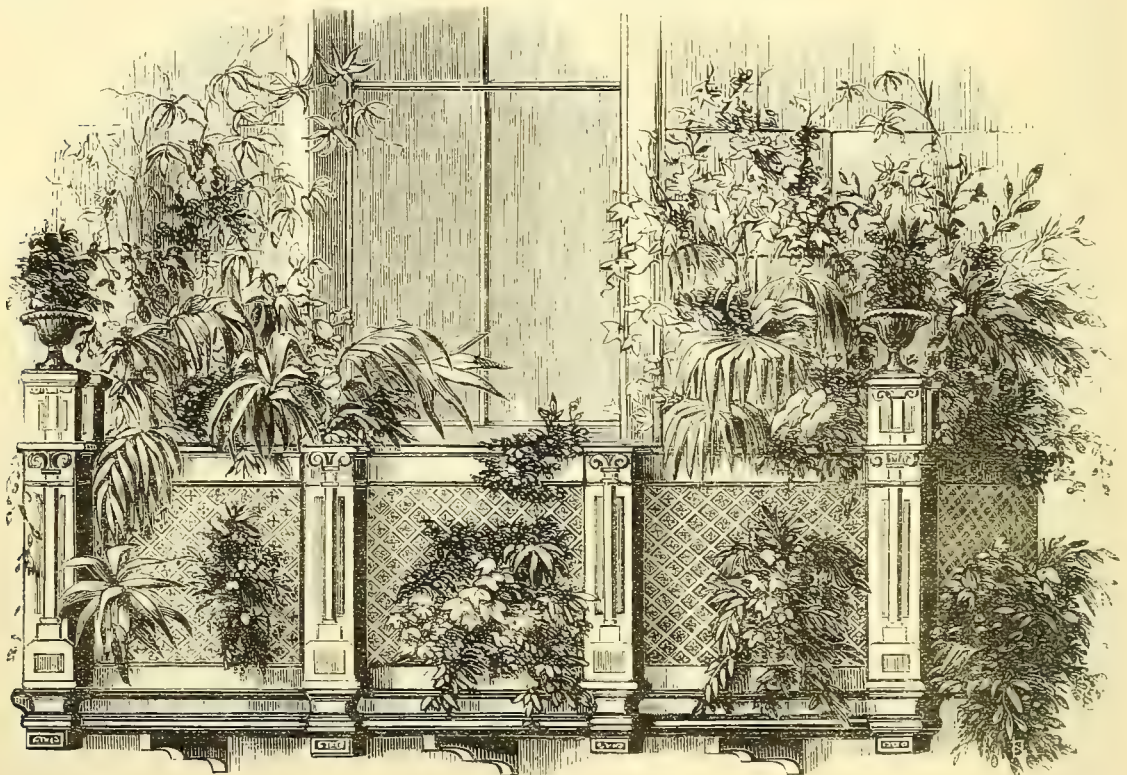
Within a very few years the plants cultivatable in a balcony have increased a thousandfold, yet we have had no special notes upon them or their management there. We copy from an American contemporary the drawing of a balcony garden. It is highly tasteful, and shows the adoption of Palms and trailers to mingle with the Pelargoniums, Fuchsias, Calceolarias, and others of our old favourites that tell of a master-ship.

We reprint what Mr. Fish wrote long ago relative to some older plants in the balcony, and we shall be glad to increase the value by notes from our readers relative to other plants whether new or old.

The boxes contain a mixture, or are filled with one thing separately. Filled either way, there would be little difficulty as to their summer treatment; but the winter treatment would be very different if the proprietor chose to keep the plants for another season. Even in summer the treatment should be different. Coolness and moisture for Calceolarias; heat and not too much moisture for Scarlet Geraniums. When Tropæolums are established they need little moisture to cause them to bloom freely. If the proprietor chooses to purchase a fresh lot for a summer display, the best thing he can do is to let

them all die with the frost, and plant with Tulips, &c., for spring. If he wants to save his plants he must proceed according to circumstances. If the Calceolarias and the Geraniums are mixed, it would be best to separate them either by potting each plant separately, or putting each kind separately into a larger pot or a box, so that each can get the requisite treatment. For instance: In the case of Calceolarias we would cut the plants pretty freely back—say in October, lift them a week afterwards with all their roots and a good portion of soil, pack them closely together, water them, place them near the glass in a cool room in winter, keep them as much from fire heat as possible, keep the soil rather moist all winter, and give more room to the plants by turning them out in boxes in April.

Now for Geraniums thus mixed. We would also take them up, and either pot or pack closely in a box, water to settle the earth about the roots, and about the end of October we would strip off the whole of the leaves and the very soft points of the shoots, allow the soil to become dryish, but not dust dry in winter, and we would keep such plants in a dryish place—say a dry cellar or a garret, being not at all particular as to much light before the old succulent stems began to break, which they would most likely do in March and April. In fact, we like such old plants best when they do not show a leaf larger than a sixpence before April. They will require more water and room after that, but they will bloom in balconies as no young plants will do, and require only a tithe of the trouble of young plants in winter.



A Balcony Garden.

If you ask if that is the best way of arranging them, we say No. We would keep the Calceolarias chiefly to one set of boxes, and the Geraniums to another, with appropriate and mere temporary edgings to each. Then we would have two sets of boxes for the balconies—one for bulbs, &c., in spring, and one for blooming plants in summer and autumn. About the middle of October we would prune back the Calceolarias pretty freely, so that we should have fresh shoots near the surface of the soil before winter. We would fresh surface the plants, and remove the boxes to a room where they could have a good portion of light, be kept moderately moist, and not exposed to more than a degree or two of frost during the winter. By April the boxes could go on the balcony during the day, with a little protection at night. These, with surface-dressings and manure waterings, would bloom early and well.

We prefer young Calceolarias to old ones, and the room that would be required for an old plant would hold something like a score or a dozen of cuttings up to March, and require no more trouble. A 6-inch pot will hold about a score of cuttings about 2½ inches long, inserted from the middle of September to the middle of October, and these placed either inside or outside of the window will be sure to strike in a month or six weeks, if a bell-glass is placed over them, and a piece of paper to shade from bright sun, a little air being given at night to prevent damping. If there are no bell-glasses, fill the 6-inch pot half full with propagating, light, sandy soil, and place a square of glass over the top of the pot, shading and giving air

as above. An improvement on the latter plan would be to use a 3½-inch pot, and set it when filled at the bottom of a 6-inch one. When struck these young plants, so close together, would require little attention, except watering and air-giving, until March, when they would require more room before being finally planted out.

Then as to the Scarlet Geraniums in boxes by themselves. Give little water after September, remove larger leaves gradually until the middle of October, clear all the leaves away by the end of it. The soil will be quite wet enough all the winter, if not dust dry. The stems will be like a succulent plant, and will hold quite enough of moisture to keep them pretty well, if the plants are not exposed to any drying heat. The best place for them is a store-room or garret, and much light is no great object provided they are kept cool enough not to grow, and airy enough not to damp, and frost kept out by the covering of a cloth, or a little hay used to prevent the stems freezing. When such plants, about March, begin to break and show leaves the size of half a sixpence, the boxes should be brought near a window, and in a sunny day the stems should be dusted or sponged with water. Ere long a little water about 70° should be given the soil, not all over at first, but poured into holes made with skewers a few inches apart. In a few days repeat the process if the weather is at all bright. When the leaves get between the size of a sixpence and a new halfpenny, all risk is over. Scrape away then a portion of the surface soil—say from half an inch to an inch deep, without injuring

the roots, and fill up with rich compost, of which soil may form one part and rotten dung another, and then water as needed. These boxes may be expected to bloom most splendidly during the summer, and to go on from year to year far exceeding in brilliancy, and with a tithe of the trouble involved in keeping young plants over the winter. Every year, for some time past, we have had fine plants of Tom Thumb Geranium in the flower garden. They are in largish pots, plunged. About the end of October the pots are generally raised, and plants and pots together go into a shed until we get time to pick the most of the leaves off. The plants then generally stand in a shed secure from frost all the winter. In spring a few withered points will want removing, and the plants are placed first in a cool house, just as inside the window of a room. When growth commences they get a little water and then are fresh surfaced.

If *Tropæolums* of the *Elegans* or *Triomphe de Hyères* kinds are grown we would place little dependence on the old plants. If taken up, if the boxes must be changed, or if left alone in boxes of *Calceolarias* or *Geraniums*;—in the first case, they would have too much moisture in winter, and in the other case they would be too dry even for such succulent plants. The best way with them is to keep a supply of young plants from cuttings, and let the rest die. In the case of the common *Tropæolums*, and even the Tom Thumb scarlets and yellows, which are very beautiful, the best plan is to sow seeds at the sides of the boxes in April, or what is better, sow in a pot inside the window at the end of March. Pot-off into small 3-inch pots as soon as the plants are 2 inches high, and then in May turn out the nice, established plants in the sides of the boxes on the balcony.

WORK FOR THE WEEK.

KITCHEN GARDEN.

The weather lately has encouraged a rapid and luxuriant growth in vegetation. Plant the *Broccoli* and *Winter Greens* in all disposable vacancies. Some attention should be directed to the proper distribution of sorts of *Broccoli*, appropriating, for instance, all protected situations to the tender sorts. Avoid planting borders fronting fruit trees. Continue to ridge-out *Celery*. Plant *Leeks* in well-prepared land. Advancing *Peas* should be well attended to, and successional *Kidney Beans* will require some protection against the attacks of slugs. The early crops of *Peas*, *Spinach*, *Radishes*, and *Cauliflowers* should be cleared-off the ground as soon as their edible supply is exhausted; the ground, well manured and dug, might be planted with *Cauliflowers* or *Walcheren Broccoli*. Sow *Endive*, *Lettuces*, *Spinach*, *Turnips*, and *Radishes* to maintain the successional supply. If weeds be not followed-up and destroyed they will become most mischievous in their effects.

FRUIT GARDEN.

As close gloomy weather is favourable to the fecundation of aphid, additional attention should be given at this time to Peach, Cherry, and other trees, both on walls and espaliers, with a view to the timely destruction of insect annoyances. Peach trees will require repeated attentions directed to the judicious regulation of the wood, with the view of maintaining the equilibrium of the tree. An undue growth of laterals should be suppressed, the shoots regularly tacked-in to the wall, and the fruit exposed to the light. Trained Pears demand similar attention. Remove Raspberry suckers where a disproportionate quantity exists; four will be sufficient to remain. Strawberry runners will be found sufficiently advanced for layering. Small pots are generally preferred for the purpose, shifting them twice.

FLOWER GARDEN.

Now is the time when all flowers in masses or mixed beds should undergo a thorough regulation for the season. Much of the beauty of mixed beds depends on observing a due proportion as to the amount of foliage. It does not look well, for instance, to find *Phloxes*, *Asters*, and other gross herbaceous plants with a score of shoots each, smothering such delicate neighbours as *Verbenas*, *Nierembergias*, or *Calceolarias*. Such overgrown specimens, where they exist in mixed beds or borders, should be much reduced in size; in fact, four or at the most five shoots are amply sufficient. All ripening bulbs should be removed into a cool, dry, and shady situation; those still somewhat green, if they must be removed, may be taken up with a ball of earth and heeled in a somewhat shady place for a few weeks longer. This will be better than forcing them into a state of rest. Many of the bulbs, however, as the

Crocus, &c., with small leaves, may have flowers introduced around, and mingled with the patches. Sweet *Verbenas*, *Petunias*, the *Myosotis*, and even German Stocks or *Asters*, may soon be made to cover their remains. Above all, let everything be well staked, for summer storms when the season turns out ungenial, frequently prove very destructive in a few hours. Perpetual *Roses* which have blossomed freely will be benefited by a slight top-dressing and an application of manure water, to insure a healthy second bloom. Climbers generally should be looked to. Lay Pinks and Cloves for potting. Russian Violets may be separated and new plantations made. Mow and roll grass. Trim edgings. Attend to the propriety of walks, the weather at present encouraging the growth of weeds. Plants growing in baskets and vases should now have a final stirring at the roots before the surface is entirely covered with foliage, likewise put on a layer of moss to check excessive evaporation, and thus save some labour in watering, which they otherwise would frequently require, as they are generally elevated above the surrounding surface, and, therefore, more exposed to the rays of the sun. Bear in mind that *Fuchsias* in vases should be attended to daily as regards watering; it is inattention to this that causes the bloom to drop, and in course of time renders the plant unsightly. The shrubbery will require frequent attention at this season. Remove all decayed flowers and seed-vessels from American shrubs; this will not only give them a neat appearance, but will in a great degree add to their strength, and, as a result, will secure an abundant bloom next season. Now is a good time for layering *Rhododendrons*, *Azaleas*, &c., just as they are coming into full growth. Single specimens of choice trees and shrubs planted upon the grass in open places should have the long grass regularly cut away from about the stems. Be sure that the fences placed around them for protection from hares and rabbits are in good repair.

GREENHOUSE AND CONSERVATORY.

At this season, when the plants in the conservatory are making their growth preparatory to blooming, it is of the greatest consequence that the border in which they are planted should be properly examined as to its humidity throughout, and receive, if necessary, a thorough soaking of weak liquid manure. This application should not be delayed too long, or, if applied late, it might prolong the growth so much in the autumn as to prevent its getting ripened in due time. These remarks apply, of course, to those plants permanently planted out, such as *Camellias*, *Oranges*, *climbers*, &c. Give all the air possible at this season both night and day. The greenhouse at the present time is occupied principally with *Pelargoniums* and such-like softwooded plants, and possibly also with specimen *Borzonias* and *Eriostemons*. Keep a sharp look-out after the former, and see that they are not suffering from mildew, which will quickly play havoc with them. *Leschenaultias* which have done blooming must be repotted, if necessary, and placed in a shady situation to make their growth. The flower-buds should also be removed constantly from the young growing plants, which should now be making rapid growth. Look well to those stove and greenhouse plants which are preparing for winter blooming, also *Achimenes*, *Gloxinias*, *Gesneras*, &c., a good stock of which will be found useful in the autumn. *Chrysanthemums* must be duly potted and attended to. Supply them liberally with manure water, and sprinkle them overhead every evening. Destroy insects on *Cinerarias*, and above all things see that your *Azaleas* are clear of thrips. If they are not, take them from the pit or house and give them a thorough good washing, then place them in a close room, fumigate them, and wash them thoroughly again before returning them to the pit.

STOVE.

Here a number of *Clerodendrons* and such-like softwooded plants will now be showing bloom, and with the late-blooming *Ixoras*, *Dipladenias*, *Echites*, &c., this house will be very interesting for some time to come. Give abundance of air at all times, and endeavour to keep the air of the house saturated with moisture. Look closely after insects, especially the mealy bug, which delights to get into a truss of *Ixora* flowers, from which, undisturbed, it will soon colonise a whole house. Weak liquid manure should be used here once or twice a-week, as well to sprinkle the house as to water the plants. The young plants which have been removed from the dung pit to this house must be duly attended to. Encourage the young *Ixoras*, by giving them plenty of air both night and day, to make strong hardy growth, and do not stop them any more this season.

PITS AND FRAMES.

Alpine plants in pots should now have a little attention. These miniature beauties are fully entitled to and deserve all the care they require; they add not a little to the beauty of the flower garden during the spring months, for "though small they are lovely gems." They should now be collected together. Some will require division of the roots to increase the species. Many will require weeding and top-dressing, and others shifting into larger-sized pots; finally, plunge the pots up to the rim in sand, or finely-sifted coal ashes if sand is a scarce material. They should now be regularly syringed with clean water early in the morning and late every evening. These repeated waterings will tend to cool the atmosphere in the frames, as the majority of these plants grow in high altitudes, and are indigenous to northern countries. Keep a watchful eye after slugs, mice, and other vermin that generally find a refuge in this quarter at the present season. Keep store plants in a healthy state by paying attention to watering and the destruction of insects. Collect all empty pots together, and have them thoroughly washed before they are stored away.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

House Sewage.—As instanced the other week, we are no admirers of cesspools and dirty water near a cottage door or window, but we have no hesitation in saying that the contents of such a receptacle of dirty water, be it a covered hole or barrel at the farthest distance from the house, when applied to the rougher-growing vegetables not too strong, will nearly double the weight of the produce, and even a heavy watering, though somewhat strong, is soon deodorised by the earth. All our experience leads to the conclusion that such rich waterings mainly affect growing crops. If size were a chief object we could do almost anything with Cauliflowers, Cabbages, &c., by a free use of rich sewage. For the cottager and his family a huge Cauliflower will never be a drawback, but the gentleman's gardener must be careful not to sacrifice the idea of quality to quantity. When we frequently see rich dark-coloured liquid running to waste, we wish that some cottager had it at the roots of his Cabbages and Beans.

Staking Scarlet Runners.—A little stopping when these are 3 or 4 feet in height keeps them more at home, and renders them more productive. Staking should always take place in good time, as soon as the shoots run fairly off, and we like to see the noble lines; but those who have not stakes need not despair. We have gathered quite as many pods from rows 4 feet apart and not staked at all. These we topped several times, and the chief precaution was mulching with clean litter or long grass to keep the pods clean. We know that it is a common practice after gathering the pods to wash them, or put them in water when sliced, and let them lie some time. If the pods are quite clean, the less they have of water before they are tumbled into the boiling liquid holding a little carbonate of soda in solution, the richer will be the flavour. When we used to go more from home than we do now, we wished that some one would teach the proprietors of inns and hotels, and gardeners' wives too, how to cook vegetables. The late Mr. London used to say that not one lady of the house in twenty knew anything of the matter. We have too often seen what, when sent from the garden, must have been fine vegetables, hardly fit for being placed in a hogtub; for the hog, despised though he often is, has his ideas of the tasteful and the nice.

Peas.—The hot weather, with occasional heavy showers, has been all in favour of this queen of vegetables. For many years we have run a tight race with the ducklings, but with out-door Peas we were beaten this year, the ducklings being ready before our Peas were sufficiently swelled. As regards gathering Peas, some men are perfect savages, pulling the pods off as if the strength of a giant were required for such a lilliput affair. The greater the strain on the stem of the Pea, the greater the injury to succession of pods. No better or simpler plan has ever been devised than taking a clean, small, open knife in the hand, and severing the footstalk of the Pea between the knife and the thumb. One word more: The gatherer should see that all the pods are uniform in size and age, otherwise no cook can boil them properly. We have frequently gone over a basket of Peas after a man had gathered them, and picked some twenty to thirty pods out. Even these few would have marred the uniformity of the dish, and when this is done several times the gatherer becomes more careful. Even those picked out would have come in well for soups.

We missed a fine opportunity of estimating and contrasting lots of the finest new Peas at Luton Hoo last year. This season Mr. Cadger has beaten us with Sutton's Ringleader, but he sowed earlier. He says, however, that though not quite so early, Dickson's Early is a better podder; but in our experience we can hardly draw a line between these and Carter's Early and Chater's Early. One thing we should like to do, and that is to recommend to everyone who has only a small garden Maclean's Gem. It is a very superior Pea, little behind those earliest, and though not more than a foot in height, yields a profusion of large well-filled pods, and the flavour is above the ordinary run of early Peas. The dwarf-growers are of great importance where ground is measured by feet and yards.

Celery.—We used to pride ourselves on early Celery, but owing to circumstances we are behind this season, and must make up for lost time. If any of our readers are in a similar predicament, let them beware of ever allowing their Celery plants to be dry. If kept damp enough they will soon make progress.

Onions.—The spring-sown, after being thinned and hoed, have grown amazingly. The autumn-sown ones in three successions are fine. There is a little secret, and, as usual, we must out with it, to get them to bulb well and early, and that is, not to wait until a central flower-stem appears, but to nip out the centre of each plant long before there is the appearance of a flower-stem. Just try a row, and leave another row longer, and mark the result as respects early free-bulbing, instead of huge neck-bulbing. We all have our surprises at times. After showing a rather particular man how to do it we were mortified on visiting the ground to find it covered with the remains of Onion tops, three or four times the quantity being taken from the plant that we wished. Of course the check was great, but nevertheless the plants bulbed freely. It is, however, always best to avoid checks, unless on an infinitesimal principle. The nipping-out the centre of a large autumn-sown Onion increases the tendency to bulb freely, and arrests anything like a seeding process as effectually as if more of the centre had been removed. The taking away more arrests free growth, which is not at all desirable.

Cauliflower, Peas, &c.—Instead of taking our machine-mowings to the rubbish-heap we have lately used them largely as mulching. The grass is so short that it takes with it no seed weeds, and keeps the ground moist for the roots.

FRUIT DEPARTMENT.

Thanks to "J. A." for his note on Strawberries. We must find out the cause why Dr. Hogg Strawberry dies with us out of doors. Such notes are most valuable to all concerned, and show clearly how a candid record of failures is often as valuable as a record of successes. It did mortify us to find such fine fruit in pots, and such wo-begone and dead plants out of doors. As "J. A." states, the crops of Strawberries seem plentiful out of doors, and the foliage in many cases is extra fine, but we fear we shall not be able to gather the splendid single specimens we have been having for months in pots.

Orchard Houses.—We have still a few Strawberries in pots excelling at present those coming-on out of doors. We have watered these houses freely with sewage water—that is, water that goes from all parts of the mansion, laundry, &c., and is taken from a tank. If very strong we add some clean water to it. Cherries in pots for the last three weeks seem, from their size and brilliancy, as if they liked it. Some of our readers err in giving manure water too thick and too strong. We like it clear, so as to leave little or no sediment on the surface of the soil. It is best to err at first on the side of weakness. Brandy itself is a good medicine, and it is often a valuable stimulant, but what would soon become of the man who used it without being diluted with five or six times its bulk of good water? Two of the cheapest and best washes for plants under glass, or even in the open air, we know, are soot water and soft-soap water; but the first we use as clear as sherry and water, and the latter, though greyish in colour, without a particle of sediment, merely by dissolving a pound or so in hot water, allowing it to stand, and pouring it off clear into thirty-six gallons of clear water. As far as insects are concerned that application, forcibly applied, will beat all the costly nostrums that are so enticingly spread-out before us. Though there is a trace of a greyish colour on the water, nothing of that is seen as the leaves get dry. Of course, just as in the case of the useful Gishurst, it is easy to overdo with soft soap, and to kill wood as well as insects. We generally use it weaker than stated above, and if used now and then insects will be kept at

bay. All applications are pretty well useless when once they have obtained the mastery. "A stitch in time saves nine." Very often in gardening, if the one stitch is neglected you may save all labour as respects the nine, because it will only be labour thrown away. We have known of hundreds of pounds of tobacco used in gardens, when for all the utility concerned they might as well have been burned on an open hearth; 2 or 3 lbs. judiciously applied might have answered and told with profit.

ORNAMENTAL DEPARTMENT.

By renovating our lawns we have given ourselves extra work, as the grass does grow. Flower-beds have as yet required little attention, except planting and securing, and but for four-footed intruders we should get on swimmingly. Our Roses on walls that were grand are now at a standstill; they have had a dusting of sulphur and soot, and washings with soap water—not suds.

Pinks and Carnations have had supports; the easiest to use is a twisted wire. Lots of plants have been potted for succession. The great drawback in most places is room. People see a few things good in a little house, because appropriated to these things alone; they forget that they demand ten or twenty times the quantity from the same place. Cut flowers in some places are getting to fever-heat. We placed a number of plants under shade to save watering and exhaustion. We shall propagate Pinks, &c., ere long, slipping the cuttings out by their sockets. Gave rich manure water to *Chrysanthemums*, large *Pelargoniums*, and *Fuchsias*, and clear water to successions. There is a fitness in things. We would as soon feed a baby on roast pork as give rich soil and rich manure water to small plants.—R. F.

TO CORRESPONDENTS.

N.B.—Many questions must remain unanswered until next week.

TYING ROSES DOWN TO A HOOP (*A Constant Subscriber*).—This is called quenouille fashion. Céline Forestier could be so trained better than Gloire de Dijon, as its wood is more pliant. When the shoots of Gloire de Dijon, or of other Roses, are able to bear it, put a small weight proportionate to its strength towards the end of the shoot.—W. F. RADCLIFFE.

WEEDS (*J. C. C.*).—There is a book by J. Donaldson, published in 1843, entitled "The Enemies of Agriculture, Botanical and Zoological, their Description and Extirpation;" there is also a better volume by B. Holditch, "The Weeds of Agriculture."

ASPHALT WALKS (*Horti*).—Take two parts of very dry lime rubbish, and one part coal ashes, also very dry, and both sifted fine. In a dry place, on a dry day, mix them, and leave a hole in the middle of the heap, as bricklayers do when making mortar. Into this pour boiling hot coal tar; mix, and, when as stiff as mortar, put it 3 inches thick where the walk is to be. The ground should be dry and beaten smooth. Sprinkle over it coarse sand; when cold, pass a light roller over it, and in a few days the walk will be solid and waterproof. We think it would answer for a threshing floor.

ROSE BUDS WITHERING (*C. Jones*).—It is probably caused by want of manure. Remove the surface soil down to the first roots; cover them with some thoroughly decayed stable manure; return the soil, water abundantly, and keep the surface mulched all the summer. Your plant is an *Euphorbia*, and we think *E. lathyris*, but the specimen was smashed.

ADIANTUM FARLEYENSE.—*A Lady Gardener* writes to us thus:—"I have in my stove a large plant of *Adiantum farleyense*, and a plant as closely as possible resembling *farleyense* has come up in a pot in the stove. Can any of your readers inform me if *farleyense* has yet been raised from spores?"

LEAVES OF ROSE TREES INJURED (*A. C.*).—The leaves of your Roses were so smashed that it is difficult to answer your questions. The Saw-fly, *Scandaria ethiops*, has nibbled the surface of the leaves. Mildew is a fungus that affects the tender leaves in hot dry weather. It also proceeds from the roots, and passes through the circulation. A fine yellow Rose, a wall tree 14 feet high, some years ago died, and when dug up it was discovered that the whole of the roots were white with mycelium. Mr. Radcliffe had some Roses under glass much affected with mildew; he had them sponged with vinegar, which completely removed it. If the trees are not dressed for mildew, it is best to cut off all the mildewed portion. He has got rid of orange fungus, which did so much mischief last year, by cutting below it to a dormant eye.

STORING POTATOES (*Wear Hall*).—So far from its being judicious to take up the tubers before the stems are quite faded, there can be no doubt left upon the minds of those who have tested by experiment the antagonistic modes, that upon no account should any Potatoes be taken up, either for seed or storing, until the stems are totally dead. The Potatoes will be best kept by placing them in layers alternately with earth, so as not to touch each other, on the north side of a wall, covering the whole about 12 inches deep also with earth, and with a smooth inclined surface outside to shoot off the rain. No implement ought to be employed for taking up the roots but a fork with three flat prongs; and the mode most economical of time and labour, and consequently of expense, is to sort the Potatoes at the time of taking them up. If the Potatoes are thus stored there will be no shoots requiring to be rubbed off at planting time. We never wait to dry the tubers, but take them up and store them between the layers of earth at once.

SHRUBS FOR AN ISLAND (*F. W. H.*).—It would be well to have the open stone wall cemented, so as to keep the water from the soil; besides, it would improve the appearance, giving the character of a rocky isle. We have such a one, and it is completely covered with Gorse, yellow Broom, and grass; and it has an excellent effect. We have another that has upon it a rather scrubby Holly, two or three good Hollies, some Whin, Broom, and Heath, and it has

a very fine effect. We have no experience of other evergreens on islands, and in our case the roots are not in stagnant water. On ground not free from water we have the Weeping and Cut-leaved Birch, Kilmarnock and American Weeping Willows, scarlet and variegated Dogwood, *Deutzia scabra*, and *Gaultheria Rosea*. The ground is covered with Sedges and Grass to the water's edge.

CABBAGES FOR EARLY CROP (*Cape Hill*).—We do not see in what way we could improve on your treatment, which to us appears quite sound. For market purposes we do not think you can improve much on the kinds, but you may try Cattell's Reliance, Wheeler's Imperial, and St. John's-day Drum-head. Sow from the 10th to the 15th July, and pursue the treatment you have adopted in other years. If you do not care about a large Cabbage, but want a compact one with a good heart, we recommend Atkins's Matchless (*Veitch's Improved*). Hill's Dwarf Incomparable is a fine early variety. Matchless may be planted 15 inches apart every way.

PLANTS FOR A HANGING BASKET (*Dolly Varden*).—To come in during September there is no finer subject than *Torenia asiatica*, but some strong plants ought to be planted out forthwith, encouraging them with plenty of heat and moisture. Maidenhair Ferns would do well, with *Selaginella cæsia* for the edge. Finer subjects, however, are *Adiantum setulosum*, *Nephrolepis tuberosa*, *Goniophlebium subauriculatum*, and *Adiantum Capillus-Veneris*, but they require some time to become established. If you wish for flowering plants we should employ varieties of *Tropæolum Lobbianum*, as *Brilliant*, *elegans*, or *Crystal Palace Gem*, and the *Ivy-leaved Geraniums*.

BRIARS FOR ROSE STOCKS (*P. T. B.*).—By the root-stem we meant that part of the Briar below the soil from which the fibres or roots are produced. In taking up the Briars, if you can preserve any fibres within a foot of where the stem was exposed above ground it is well, but their preservation is not material; and if you leave from 4 to 6 inches of the root part from which fresh fibres can be emitted it is sufficient. If you have about 6 inches of the root it is as good as a foot or more, for the longer it is the greater will be the likelihood of suckers. By all means take up the Briars and plant in November.

HYACINTH SEED SOWING (*Idem*).—Sow the seed as soon as ripe in pots of good, rich, light soil, and cover it with a depth of soil equal to the thickness of the seed. Afterwards place the pots on a shelf in a greenhouse, and keep the soil moist. Vegetation will take place in due time, and when the seedlings have made a season's growth they may be planted out of doors in a warm situation; take up annually in the usual way, and in due time they will attain sufficient strength for flowering. We cannot name any firm in particular. We cannot recommend dealers.

BANISHING ANTS (*Idem*).—A solution of 2 ozs. of guano to the gallon poured into their haunts will drive them away, and so will the ammoniacal liquor of the gasworks. Two table-spoonfuls of spirits of turpentine to a gallon of water poured into their haunts will be equally effectual; but the turpentine and ammoniacal liquor have the disadvantage of browning the grass, which the guano does not.

HEATING BY A STOVE (*H. L. T.*).—The great secret of heating a house by a stove, be it metal or brick, is to concentrate the heat as much as possible in the stove, and to depend but little on what heat escapes from the smoke pipe. The use of the fire lump standing, say, 3 inches before the smoke pipe is just to prevent the free egress of the heated air. If the smoke pipe were 4 inches in diameter this fire lump should be some 6 inches wide. It acts best, and so will the stove altogether, if the smoke pipe go out not from the top, as it is often made to do, but from the side—say the side opposite the feeding door, and some 6 inches or so from the top of the stove. The fire lump we used to consider a great advantage, and we do not undervalue it now, but our chief reliance now on regulating draught would be on close-fitting furnace doors, and especially ashpit doors. By the latter the draught may be regulated to such a nicety, that the intricacy of the fire lump may be entirely dispensed with. When once a stove is hot enough very little air supports a slow combustion—say an opening 1 inch long, and some twelfth part of an inch wide. Thus managed we have often had a stove so hot that you could not touch it, and yet the smoke pipe from it would be almost cool. You must exercise a little patience, and become acquainted with your stove before you can do this. No mere rule will enable you to succeed, but a little perseverance will. The economy of heating by a stove consists in concentrating the heat from the fire in the stove. A fire-box only 8 inches deep will keep in all night if the coke is well broken and the above attention is given to curtailing the air necessary to slow combustion, but in the great majority of cases where stoves are used, provided enough of heat is obtained, it is not necessary that the fire should be kept in all night. For mere security one good fire would often be sufficient. For effective heating we should prefer an open space between the fire-box and the sides of the stove. But practically we find lining with fire-bricks little if anything inferior. If an iron stove is used for a plant house there ought either to be this open space or a lining of fire-bricks; in other words the burning fuel ought never to touch the sides of the iron stove. When it does, the iron is apt to get red hot, and few plants will stand that uninjured. A close-fitting furnace-door for feeding is sufficient, but if made double with, say, an inch between them, the outside door is less liable to be warped by the heat. We have also found with such double doors with an open space for air between them, that a small opening in the outer door greatly obviates the unpleasantness of smoke coming densely from the smoke pipe. 5 Is answered in No. 1.

PIT FOR WINTERING CUTTINGS (*E. G. S.*).—A heated pit 6 feet wide, sunk beneath the ground level, in front a fire surrounded by clinkers and fine gravel at top, with sand for plunging in, or earth for growing in, would answer well. The success will greatly depend on having upright pipes—say from 2 to 3 inches in diameter every 4 feet, to allow of the escape of heat upwards, and to give a command of moist or dry heat at pleasure. Of course, two 4-inch pipes at bottom instead of a flue would be better, and two for top heat. For small affairs hot water is dear, for large affairs it is the cheapest. As to having too much heat we have little sympathy. Why not manage the stakehole better?

SOWING GERANIUMS, VERBENAS, AND PETUNIAS (*A Subscriber*).—The seed should be sown in pans filled with two parts turfy loam, one part leaf soil, and one part of sandy peat, chopped up finely and sifted through a half-inch sieve, adding to the sifted part a sixth part of silver sand. The pans should be drained to one-third their depth, over that place about an inch of the roughest of the compost, and fill to within a quarter of an inch of the rim of the pans with the sifted soil, making the surface smooth, and pressing rather firmly but not very hard. Scatter the seed evenly, just cover it with fine soil, and press very gently. Water lightly, and place in a hotbed with a gentle heat of 70°. Keep just moist, and when the plants appear keep near the glass with abundance of air. The plants will be up in a fortnight or less; but *Verbena* seed is sometimes long in vegetating, therefore do not discard the pan

but keep it for a twelvemonth. Of course that will be unnecessary if the plants appear. When they have a pair of rough leaves prick them off an inch apart in pans prepared as for the seed, and return them to the frame. When they become established, and before they are crowded, pot them off singly in 3-inch pots, and place them in a frame, keeping them rather close and shaded for a few days, and then harden them off, admitting air freely. If you wish to grow them in pots they should be shifted into others of a larger size as soon as those in which they were first potted are full of roots; or you may plant them out in good rich soil and in an open situation out of doors. They will flower the same season as that in which they were sown, but do not take the *Geraniums* up in autumn; pot them, and winter them in a greenhouse. The best time to sow the seed is in March; but you may sow now, and if you have the plants established in pots before winter they will flower early and well next year. They should be wintered in a light airy position in a house from which frost is excluded.

RUNNERS FROM UNFRUITFUL STRAWBERRIES (*Idem*).—We do not advise your taking runners from the plants which are this year unfruitful. Very likely they will be as unfruitful as the plants from which they are taken. In no case plant runners of unfruitful plants.

CATERPILLARS ON CAULIFLOWERS (*J. N. R.*).—Dust them with white hellebore powder; but hand-picking is the cheapest and most effectual remedy.

BOTTOM-HEATING A PLANT STOVE (*G. T. B.*).—It is easy to let the water out of a trough by means of a tap or plug. In very dull weather it is possible to have too much moisture at bottom. We should have no difficulty with your coiled pipe enclosed in a chamber with sand over, a few pebbles or some rough gravel laid on the top of the covering, and an open pipe in which to pour down water. Thus you could give a moist bottom heat, even when it was desirable to keep the surface sand rather dry. Except in very exceptional circumstances, as in continued cold damp weather, damping the sand would be quite sufficient, and thus you might have saved the galvanised trough.

BUDDING ROSES (*G. T. E.*).—Full directions have been detailed in works on Roses, as Mr. Paul's, Mr. Cranston's, and the Rev. S. R. Hole's "Book on Roses." It is difficult to give a verbal description of any use for practical purposes. One hour's practice under any experienced budder will do more good than any written directions. The following golden rules may be observed:—Bud when the sap flows freely, and when the bark separates easily; with *Manetti* stock, bud low. Choose buds that are plump and well developed, but not too far gone, and let the stock be rather in advance of the scion. Do not cut off the top of the stock as the bud is at first fed by the return sap. Make the bark of the upper part of the bud fit accurately with the cross cut on the stock. Do not tie too tightly, but at the same time firmly. Look at the buds from time to time, and loosen the ties as soon as the bark seems to be too tightly bound. Do not cut the eye from the scion till you are ready for budding, nothing is so fatal as letting the eyes in the bud get dry.

GARDENERS' UNIONS (*W. H. S.*).—We must decline your communication and all others on the subject, for relative controversy is unsuited to our columns.

THE BRITISH GARDENERS' MUTUAL AND SELF-SUPPORTING SOCIETY.—We are informed that "W. A." and several others who have forwarded stamps for rules, will find by this time their copies have arrived.

FUNGUS! (—).—The plant is *Bupleurum fruticosum*, and not British. The Fungus is *Polyporus versicolor*.

CUTTING IVY—STRIKING IVY CUTTINGS (*Poor Cockney*).—The Ivy against a wall should be clipped closely and evenly with the shears. This is best done in April. At this time of year you need only remove any irregularity of growth, preserving, however, the young leaves, but you may take off some of the old ones where they are too crowded. Defer the general trimming until next April. Ivy cuttings may be put in now in good, light, sandy soil on a north border, choosing cuttings about a foot long, and inserting them half their length in the soil. A border on the north side of a wall is most suitable for the cuttings. If in the open they must have shade from the sun. They will be well rooted by next spring, when they may be planted out.

TREES OVERHANGING KITCHEN GARDEN (*T. T.*).—Ground shaded by large trees and under their drip, is of very little value as a kitchen garden. If they are ornamental trees there may be cause for their not being lopped. You can demand that the branches which overhang should be cut off, but it is well to try what can be done by persuasion. As regards the other advice you ask for, consult a solicitor.

PELARGONIUM LEAVES SPOTTED (*H. G.*).—The leaves sent are spotted by the sun shining on them when wet. The moisture may have arisen from syringing, which ought not to be practised, or from keeping the house close at night, and not giving air early enough to dissipate it before the sun strikes on the foliage. Keep the leaves dry and admit air at night. A little will suffice to keep the moisture from condensing and falling on the leaves.

PRIMULAS, CALCEOLARIAS, AND CINERARIAS FOR CHRISTMAS FLOWERING (*North Wilts*).—The seed ought to be sown about the second week of March. Sow in well-drained pans filled to within a quarter of an inch of the rim with very fine compost, which may consist of two parts light fibrous loam, one part leaf soil, one part sandy peat, and one part of silver sand. Make the surface level, scatter the seeds evenly, and cover those of the *Primula* and *Cineraria* about an eighth of an inch deep with very fine soil. The *Calceolaria* seeds should only be covered with a sprinkling of silver sand. Place the pans in a hotbed of 65° to 70°, and keep the soil just moist. When the seedlings appear place them near the glass, and admit air moderately, avoiding cold and drying winds. When the seedlings can be handled prick them off in pans an inch apart, returning them to the hotbed where there is a gentle heat, and keep them close and shaded for a few days from bright sun until established, then admit air freely. They should have abundance of air, and are to be well hardened off so as to be placed in a cold frame by the middle of June, when they will be large enough to be potted-off singly in 3-inch pots, which should be set on coal ashes in the frame. The latter, after the plants are put in the 3-inch pots, should be kept rather close for a time, and shaded from bright sun. By the middle of July shift into 4-inch pots, and the *Cinerarias*, as soon as they fill their pots with roots should be shifted into pots a size larger, also the *Calceolarias*, but the *Primulas* need not be shifted until August, and then they should have 7-inch pots. The *Calceolarias* and *Cinerarias* should be stopped, if they throw up a flower-stem, to within three or four leaves of the base, but this stopping must not be practised after August. In September the *Cinerarias* and *Calceolarias* should be placed in their blooming-pots, which may be 8 or 9 inches in diameter, according to the size of the

plants. The *Primulas* should have the trusses of bloom pinched off until the middle of September. By the end of that month the whole of the plants ought to be removed to shelves or a stage where the plants will be near the glass, and be kept in a temperature of 45° to 50° at night. In the frame, through the summer, the plants should have an abundance of air, and be sprinkled overhead morning and evening with water from a fine-rosed watering-pot, and in the house should be damped overhead until November, or even later if the weather be bright. The watering must be liberal. The *Primulas* should not be watered overhead, and after October they will require careful watering. The *Primulas* will flower in the temperature named—45° at night, but the *Cinerarias* and *Calceolarias* require a temperature of 50° to 55°, dependent, however, on the lateness or forwardness of the plants for bloom. You will need to exercise some judgment in this respect, keeping them back by affording less heat if too forward, and more if too late. They need abundance of air, light, and room. Without securing these conditions it is next to useless striving to flower *Cinerarias* and *Calceolarias* at the duldest period of the year.

MARCH STANDS (*Nil Desperandum*).—The table decorations are so called because first designed by Miss March. An engraving of them is in our No. 119.

NAMES OF PLANTS (*Craven*).—We think your *Thorn* is the *Crategus tanacetifolius*, Tansy-leaved Azarole. (*Expte*).—We cannot name plants from their leaves only, we need the flowers also. (*D. D. M.*).—It is the Feathered Hyacinth, *Muscari comosum monstrosus*.

POULTRY, BEE, AND PIGEON CHRONICLE.

FOWLS FOR PROFIT, AND AS A MEANS OF SUBSISTENCE.—No. 7.

DUCKS.

I do not think this treatise would be complete without a few words upon the rearing and management of Ducks. They may be made to return a large profit if carefully managed.

There are six breeds of Ducks—the *Aylesbury*, *Rouen*, *Musk*, *East Indian*, *Brazilian*, and *Call Duck*. Of these the *Aylesbury* and the *Rouen* are the most useful varieties. The *Aylesbury* should be pure white in plumage, with flesh-coloured bill and yellow feet; it lays very large white eggs, and its flesh is very delicate in flavour. The *Rouen* (a French breed) is a precocious bird, arriving at maturity at the age of three months; it is a good layer of large green-coloured eggs. It is harder than the *Aylesbury*, and does not commence laying quite so early, but will thrive where the *Aylesbury* would die.

Selection of Breeds.—The selection of stock birds is the first consideration. The cross between the *Rouen* and *Aylesbury* is much esteemed. The flesh is said, though I do not know with what truth, to be improved in flavour by crossing; notwithstanding this, I advise all who breed for profit to keep pure breeds. The laying capabilities of the birds are unaffected, whether pure or crossed, provided they are only crossed once, or, if I may be allowed the term, if the bird is a pure cross; but those who keep pure birds can readily realise a good price for them at any poultry sale, and the eggs for breeding purposes form an important item in their profit.

Let us suppose, then, that we stock our yard with a *Rouen* drake and three Ducks; this breed is preferred, being the hardest, but should *Aylesbury* Ducks be selected, if they can be kept on a dry soil and in a warm situation they will thrive as well. These Ducks will commence laying in February, earlier if *Aylesbury*, and will lay for five months, with the intermission of about a week or a fortnight twice or thrice during that time. It is probable that two of these Ducks will desire to sit, and if so let them sit; if they have laid well they require a rest, and we do not find that, like the hen, they will commence laying again immediately they are put off sitting.

Incubation.—Let the Duck have from twelve to fifteen eggs, and if possible persuade her to sit in a place of your own choosing. This should be in a separate division of the Duck house, set aside solely for sitting. The Duck will very soon learn to leave her eggs only when desired. The door of the house should be opened, and she should be gently called, and allowed to return of her own accord. She will cover her eggs carefully, and must always be permitted freedom; she will not abuse it, and is most impatient of restraint. She should have access to a pond or tub of water in which she can bathe, as this is necessary to the well-being of the ducklings in the eggs.

The time of incubation is twenty-eight days, and the Duck should not be disturbed when hatching-out; she must not be shut into her nest when incubation is completed, for, if deprived of liberty, she will destroy the young ducklings. Where hens as well as Ducks are kept, I advise several sittings of Ducks to be made during the season, and placed under the hens (a large hen will cover twelve or fifteen eggs); and where only three Ducks are kept, many cannot be reared otherwise. I shall give my experience of this mode of rearing ducklings. Let the eggs be examined after being sat upon for ten days, and reject those which are transparent.

After the ducklings are all hatched let them alone for twenty-four hours; they will then be ready for food, which must consist of hard-boiled egg minced and mixed with oatmeal. When three or four days old they may have oatmeal mixed

with milk, and a little grain, rice, &c. Keep them very dry; do not on any account permit them to have access to water excepting to drink, as it will be fatal to them should they get saturated with water. This may seem impossible, water being the natural element of the Duck, yet it is nevertheless true. Young ducklings should never be allowed to swim until they have exchanged their down for feathers. I give them occasionally on a warm day a shallow dish to wash in, but that must be the extent of their indulgence. Should the weather be wet they must be kept in a shed and fastened securely. Should one accidentally get wet and take cramp it must be placed in flannel, and kept warm near a fire. Should it not appear to recover, give it ten drops of spirits—gin is the best—diluted with five drops of water; this may be repeated two or three times, at intervals of half an hour. I allow the Ducks to use the same fountain as the hens, taking the precaution to fix a piece of wire-netting over the mouthpiece, as ducklings would endeavour to stand in it. Rats, weasels, &c., are great enemies to young Ducks; indeed, they are not safe from these vermin until they are several weeks old, when they exchange their whistling note for a quack.

HOW DUCKS MAY BE MADE TO RETURN A LARGE PROFIT AT A SMALL OUTLAY.—I purchased last season three sittings of Ducks' eggs, and placed them at intervals of a few days under hens. I reared thirty-two ducklings. When the different hatches were three or four days old I removed them to a large warm room, and gave them all to the care of one large cross-bred hen—a cross between a Dorking and Brahma. She was apparently quite pleased with her large family, and took the greatest care of them. The weather being warm they thrive well. I supplied them plentifully with green food, the floor being always covered with parsley, carrot tops, lettuce leaves, grass, &c. I purchased a sack of Indian meal for them (240 lbs.), for which I paid £1. This food is by no means the best for Ducks; a mixture of barley meal ought to have been used, but I was so situated that Indian meal was all I could obtain. I fed them three times each day with this food and any scraps from the house, and supplied them twice every day with fresh water in a shallow vessel, putting a stone in the centre to prevent them attempting to bathe. After they were three months old I took away the hen, and removed them to a pigsty, giving them the occasional liberty of a run in the yard, that they might supply themselves with gravel, &c., which is necessary to their digestion, always plentifully supplying them with abundance of green food, which they devoured with great relish. By the time they severally arrived at the age of three months I sold them for market purposes, realising the sum of £2 12s. gross amount, they costing me exactly £1. Thus, it will be seen that I realised a profit of £1 12s., or over 50 per cent. This I intend to do again on a larger scale, and I may mention that had I purchased pure eggs, or better still, had I kept pure birds, my profits would have been greater.

I have had in use for some years a fountain of my own construction, very simple and easily kept clean inside; its cost is trifling. I shall be glad to furnish fountains of this construction to anyone requiring them.—VINCENT FRASER.

HANTS AND BERKS AGRICULTURAL SOCIETY'S POULTRY SHOW.

SOME years since a small unpretending show was timidly feeling its way to success, and working under every disadvantage. It was confined to Basingstoke, and was held during one day only. Although it was successful in a pecuniary point of view, it did not go ahead. The entries did not increase, the admission money was very trifling in amount. The Society lived well on its subscriptions, and saved money; but it seemed as though sleepiness was coming over it, and that the subscribers yawned while they paid their money to the treasurer. Then there came a change, and it was determined the show should move about; also that it should be held during two days instead of one. It was found a great improvement, and three days were determined upon. The circle in which it moved was enlarged. While it remained a small show it was lying fallow, and as soon as it was vigorously stirred it burst into rapid growth, and last year at Portsmouth astonished its managers. Instead of an unfenced paddock, now sixteen acres are required to be enclosed by wooden palings 7 feet high. Row after row of stables and pens cover the ground, sheltered overhead, and protected in every way. Huge steam engines are at work. Hard stones are broken or pulverised; water is pumped by a small steam appliance, sufficient to supply the wants of the yard. Poultry, horses, and cattle bring these and other things together. It would seem that when men are out for pleasure they part more readily with their money; hence row after row of stalls, reminding one either of a continental fair or an eastern bazaar. Carriages so light as to go alone; magnetic appliances that would cure

"The gout, the colic, and the phthisic,"

to say nothing of rheumatism; steam engines that can do all but talk; tops that spin according to rules, give no end of rainbows,

and ever so many to spare; sewing machines that require only to be supplied with thread or cotton—it may be observed parenthetically that it was said Her Majesty said that an agricultural show was the last place she should come to for a sewing machine; toys of every description; glue, that makes things stronger when mended than they were before they were broken. It is marvellous.—(Reporter.) Photography was there of course. Everything and everyone were there.

There was but one doubt—the weather. The early morning was bright, but the sun was not red. It was fine till between nine and ten, when there was a deluge. It ceased, and the sun was scorching. One question was in everyone's mouth—"Will the Queen come?" The Royal Counties Association, held in the Home Park, on sixteen acres of level and beautiful green sward, bounded on one side by the wooded slopes, crowned by the Castle, seemed to give an answer. The terrace overlooking the grounds was covered with spectators, and no one doubted Queen's weather. They were not disappointed. Soon after eleven distant cheers were heard. Every eye was turned in the direction whence they came. After a few minutes the outsiders, in scarlet liveries and mounted on grey horses, were seen heading the procession. It was picturesque; now in sight, now hidden, at length they emerged from all concealment, and the Queen entered the Show amid the loud cheers of her loyal subjects. She remained an hour and a half, and departed, cheered as at her entrance. God save the Queen!

The Prince and Princess of Wales visited the Show in the afternoon, but the weather was not propitious. They, nevertheless, seemed to enjoy the spectacle, and stayed till the last moment.

A capital display of *Dorkings* opened the poultry show. Twenty pens of good birds. Colonel Lane was first, Lord Turnour second. Many others deserved and received all the honours the Judge could bestow. *Cochins* were numerous, and the prizes were scattered. The first went to Mr. Harris, St. Day, Cornwall; the second to Mr. Woodgate, Tunbridge Wells. They were a good class. The first prize in *Game* went to St. Austell, Cornwall; the second stayed at the Royal Counties, going to Remenham Place, Berks. The same may be said of the Other Variety *Game* class; the first went to Cornwall, the other to Southampton. The names will be found in our prize-list. The *Golden Polands* and the *Black with White Crests* were very good. The *Spanish* were not as good as might be, except the first-prize pen. They belonged to Miss Browne, of Chard, and were very good. *Golden-pencilled Hamburgs* were good; the *Silver* were indifferent. The *Golden-spangled* were very good, especially the first-prize pen, belonging to Miss Palmer of Odiham. The same may be said of the *Silver-spangled*. *Light Brahmas* were well represented, adding both prizes to the many laurels of Mr. Pares, of Guildford. Dark *Brahmas* were numerous, and many good pens, but many were vulture-hocked to a painful extent. Mr. Fowler's were very good birds. *Andalusians* were weak in numbers, but very good. *Bantams* were in force. Mr. Pares was first again, and the Rev. G. Knight, of Chelmsford, second. In the Variety class of *Bantams*, Sebrights took both prizes. Three prizes were offered for the *French* breeds, and brought a good show. Mr. Wood, of Uttoxeter took first; the Rev. N. J. Ridley second and third. The varieties brought the usual numbers; *Malays* and *Silkie*s were the favoured, the latter taking the first prize.

Aylesbury and *Rouen Ducks* were a cuckoo note of success for Mr. J. K. Fowler, save second in *Aylesbury*, that went to Mr. Hedges "of that ilk." The varieties of Ducks brought *Cazarkas*, *Sheldrakes*, and *Buenos Ayrean*; the latter most excellent, and the others shown in beautiful condition. *Geese* and *Turkeys* were good and heavy, especially the latter. The Rev. N. Ridley and Miss Julia Milward deserved their honours.

Pigeons and *Rabbits* deserve mention, especially the latter, but for the present our space will not admit of it.

We must conclude by saying the Show was very successful, and the Secretary, Mr. Downes, met the success he deserves.

The Judge was Mr. Bailly.

DORKINGS.—1, Lieut.-Col. H. B. Lane, Lily Hill, Bracknell. 2, Lord Turnour, Shillinglee Park, Petworth. *hc*, T. Buckland, Windsor; T. C. Burnell, Michel dever. *c*, T. Buckland; C. Pannell, Outlands Park, Weybridge.

COCHINS.—1, S. R. Harris, Cnegrave, St. Day. 2, R. S. S. Woodgate, Pembury, Tunbridge Wells. *hc*, Miss J. Milward, Newton St. Loe, Bristol; H. Lloyd, jun., Handsworth; J. K. Fowler, Aylesbury; Horace Lingwood, Creet in Needham Market; H. D. Dent, Gosham.

GAME.—Black-breasted and other Reds.—1, H. Browne, St. Austell. 2, C. H. Ames, Remenham Place. *hc*, S. Matthews, Stowmarket; T. G. Ledger, Folkestone. *c*, H. E. Martin, Sculthorpe, Fakenham. *Any other variety.*—1, H. Browne (Ducking Game). 2, P. Warren, Southampton (Ducking Game); C. Capt. C. F. Terry, Burvale, Walton-on-Thames (Ducking Game); S. Matthews, Stowmarket (Ducking Game).

SPANISH.—1, J. Hinton, Warminster. 2, T. P. Edwards, Lyndhurst. Southampton.

HAMBURGS.—Gold-pencilled.—1, C. Bloodworth, Cheltenham. 2, T. G. Ledger, *hc*, F. G. Coleridge, Wargrave, Henley-on-Thames. *Silver-pencilled.*—1, S. R. Harris.

HAMBURGS.—Gold-spangled.—1, Miss C. E. Palmer, Odiham. 2, R. Wilkinson, Guildford. *c*, S. R. Harris. *Silver-spangled.*—1, Miss E. Miller, Woodlands, Erleigh. 2, S. R. Harris.

BRAHMA FOOTRA.—Light.—1 and 2, J. Pares, Postford, Guildford, *hc*, Rev. M. Rice, Steyning. *Dark.*—1, H. Dent, Gosham. 2, J. K. Fowler, Aylesbury. *hc*, Rev. J. Ellis, Bracknell. Horace Lingwood.

ANDALUSIAN.—1 and 2, W. Willey, Cosham.
BANTAMS.—*Game*.—1, J. Pares. 2, Rev. J. G. B. Knight, Danbury, Chelmsford. *hc*, O. E. Cresswell, Early Wood, Bagshot; P. Warren. *c*, W. B. Jeffries, Ipswich. *Any other Variety*.—1, G. F. Hodson, North Petherton, Bridgewater (Sebright). 2, R. Wingfield, Sidbury, Worcester (Black Rose-combed).
FRENCH FOWLS.—*Crève-Cœur, La Flèche, or Houdans*.—1, R. B. Wood, Woodland Hall, Uttoxeter. 2 and 3, Rev. N. Ridley (Crève-Cœur and La Flèche). *hc*, J. K. Fowler, Aylesbury (2). *c*, H. Feast, Swansea (Houdans).
ANY OTHER VARIETY.—1, A. Alderton, Hershham, Esher (Malays). 2, R. S. S. Woodgate, Pembury, Tunbridge Wells (Silkies). 3, O. E. Cresswell (Silkies). *c*, Rev. N. Ridley, Newbury (Malays); R. Wilkinson, Guildford (White Minorcas); J. K. Fowler (Lithornes); J. Hinton.
DUCKS.—*Rouen*.—1 and 2, J. K. Fowler. *c*, J. Moore, Littlecot, Pewsey. *Aylesbury*.—1, J. K. Fowler. 2, J. Hedges, Aylesbury. *hc*, J. K. Fowler; W. B. M. Lysley, Wingfield. *Any other Variety*.—1, J. J. Malden, Biggleswade (Black East Indian). 2, Capt. C. F. Terry (Ruddy Shield). *hc*, Capt. C. F. Terry (Shield); J. K. Fowler (Cayugar); O. E. Cresswell (Black East Indian).
GESE.—1, J. K. Fowler. 2, S. Pullin, jun., Herton.
TURKEYS.—1, Rev. N. Ridley, Newbury. 2, Miss J. Milward, Newton St. Loe, Bristol. *hc*, E. Kendrick, jun., Litchfield.
PIGEONS.—*Carriers*.—1, H. Yardley, Birmingham. 2, H. M. Maynard, Holme Wood, Ryde, Isle of Wight. *hc*, Chambers & Saddington, Northampton. *Tumblers*.—1 and 2, H. Yardley. *Fantails*.—1, H. Yardley. 2, H. M. Maynard. *hc*, J. F. Loversidge, Newark. *c*, O. E. Cresswell. *Trumpeters*.—1 and 2, C. Norman, Westerfield, Ipswich. *c*, A. P. Maurice, Herriard Grange, Basingstoke. *Maggies*.—1, Chambers & Saddington. 2, A. P. Maurice. *Any other Variety*.—1, H. M. Maynard (Black Barbs). 2, A. A. Gatty, Sutton (Owls). *hc*, A. Ashton, Parkfield, Middleton, Manchester; H. Yardley; O. E. Cresswell; Chambers & Saddington (Hyacinths); A. W. Priest, Adlestone (Black Runts); J. North, Reading (Barbs). *c*, A. Ashton.
RABBITS.—*Longest Ears*.—1, W. H. Webb, jun., Coseley, Bilston. 2, C. King, St. John's Wood, London. *hc*, F. Banks; G. Hill, Winchester. *c*, King. *Foreign*.—1 and 2, C. King. *Any Variety* (To include all Points).—1, C. King (Lop-eared Doe). 2, G. Hill.

EXTRA STOCK.—Prize, W. B. Boxall, Strathfieldsaye, Winchfield (White Peacock). *c*, W. Paget, Clewer, Windsor (Game Fowls).

CAMBRIDGE POULTRY SHOW.

It was a general impression that the Cambridge Show would this year suffer somewhat heavily from being held simultaneously with the summer Birmingham Exhibition at Aston. Contrary, however, to all expectation, the quality of the classes was in almost all instances quite equal to that of any previous year, and but few classes appeared to suffer even as regards the number of the entries. These facts, combined with a delightful change in the weather from the late excessive wet, caused not only the attendance of a very brilliant assemblage of visitors, but also, as the general arrangements were perfect, the expression of great satisfaction from everyone present at the strict and methodical order that prevailed.

Grey Dorkings were extraordinarily good, and we can speak with equal confidence of those in a class made conjointly for White and Silver-Grey Dorkings. The *Game* class, though containing many first-rate pens, did not muster so strongly as to numbers as on some prior meetings. The *Cochins* were really good, as were the great proportion of the *Brahma* classes shown. The *Hamburgh* classes were limited in number of entries, but the quality was mostly very good. It was, in fact, a capital pen of Silver-spangled Hamburgs that won the prize for the best pen of poultry in the show tent, some very first-rate Duckwings, Buff Cochins, and Silver-spangled Polands competing very keenly for this coveted premium. Some truly meritorious pens of *Spanish* were to be met with, but a little more care in the selection by the owners for competition purposes would have been advisable. A class for *French* breeds of poultry contained only Crève-Cœurs, but a really good lot they proved to be, in fact such as have never been seen before in this neighbourhood. Three pens of remarkably good varieties were the winners in the Variety class, in the following order—Silver-spangled Polands, Black Hamburgs, and Silky Fowls. The class for *Cross-breeds* for table purposes was the least deserving class in the Show, in fact the whole of them betrayed an amount of absolute coarseness unaccompanied with size that scarcely met the conditions for which the prizes were offered. Some wonderfully good *Game Bantams* and also Black and White Bantams were shown, and a pen of very superior Light Japanese. A large and very paying Sale class was an object of interest; and the *Turkeys* could not be spoken of more highly than they merited.

The whole of the entries in the *Pigeon* classes far outstripped anything before shown at the Cambridge meetings; the Carriers, Barbs, and Tumblers were especially good. Prizes were offered for both fowls and Ducks, "plucked but not drawn," and some very good lots were entered. As, however, now is the time of year least notable for table fowls, the entry, though quite equal to anticipation as to quality, was small as to numbers.

The Committee well deserved the success they attained, and the attention shown to the birds was open to no improvement.

DORKINGS.—*Coloured*.—1, F. Parlett, Chelmsford. 2, Rev. E. Bartram, Berkhamstead. 3, W. King, jun., Botolphham. *Any other Variety*.—1, L. Wren, Lowestoft (Silver-Grey). 2, Miss Fairhurst, Ormskirk (White). 3, Rev. F. Tearle, Gazeley (Cuckoo Dorkings).
GAME.—*Black or Brown Reds*.—1, H. E. Martin, Fakenham. 2, A. C. Swain, Radcliffe. 3, S. Matthews, Stowmarket. *Any other Variety*.—1, F. R. Hall, Cambridge. 2, S. Matthews, Stowmarket (Duckwings).
COCHINS.—*Cinnamon or Buff*.—1, H. Lloyd, jun., Handsworth. 2, H. C. Mason, Drighlington. 3, J. Bloodworth, Cheltenham. *hc*, W. H. James, Ditton. *Any other Variety*.—1, R. S. S. Woodgate, Tunbridge Wells (White). H. Lingwood, Needham Market (Partridge). 3, T. M. Derry, Gedney.

BRAHMAS.—*Light*.—1, H. Dowsett, Pleshey. 2, H. M. Maynard, Ryde. 3, J. Bloodworth, Cheltenham. *Dark*.—1, C. Howard, Peckham. 2, H. Lingwood, S. H. Dowsett, Pleshey.
HAMBURGS.—*Golden-spangled*.—1, L. Wren. 2, T. Love, Kingsthorpe. 3, J. B. Lakeman, Ipswich. *Silver-spangled*.—1 and 2, Cup for best pen of Poultry exhibited at Ashton & Booth, Mottram. 2 and 3, Withheld.
HAMBURGS.—*Gold-pencilled*.—1, W. K. Ticker, Ipswich. 2, J. Webster, Whitby. 3, C. W. Gibbs, Sutton Bridge. *Silver-pencilled*.—1, H. A. Gill, Manchester. 2, Miss Leathes, Fakenham. 3, No competition.
SPANISH.—1, C. Howard, Peckham. 2, Burch & Boulter, Sheffield. 3, Withheld.

FRENCH FOWLS.—1, W. Dring. 2, J. S. Price, Potters' Bar. 3, Miss Leathes. *hc*, J. J. Malden, Biggleswade.
ANY OTHER VARIETY.—1, W. K. Patrick, West Winch (Polands). 2, W. Catlack, jun., Littleport (Black Hamburgs). 3, T. Nash, Carlton (Silkies). *c*, Rev. J. G. B. Knight, Chelmsford (Black Hamburgs); Rev. F. Tearle (Silkies).
CROSS-BREED FOR TABLE.—1, T. Gunnell. 2, D. James. 3, W. Catlack, jun. *GAME BANTAMS*.—1 and 2, W. B. Jeffries, Ipswich. 3, S. Day, Milton.
BANTAMS.—*Black or White*.—1, K. H. Ashton, Mottram. 2, Rev. F. Tearle (White). 3, T. E. Thistle, Lowestoft (Black). *hc*, H. M. Maynard, Ryde (Black); A. Storror, Peterborough (Black). *Any other Variety*.—1, Hon. Mrs. Paget, Seole (Japanese). 2 and 3, No competition.
SELLING CLASS.—*Price not exceeding 30s.*—1 and 3, J. Bloodworth, Cheltenham (Buff and White Cochins). 2, F. R. Hall, Cambridge (Black Red Game). *c*, B. W. J. Thomas, Brecon (Buff Cochins). *Price not exceeding 30s.*—1, W. Nottage, Northampton (Spanish). 2, H. Dowsett, Pleshey (Grey Dorkings). 3, W. King, jun. (Grey Dorkings). *c*, G. W. Hibbert, Hyde (Houdans); Rev. F. Thomas, Basingstoke.
DUCKS.—*Aylesbury*.—1, D. James, Ditton. 2 and 3, C. Thurnall, Whittlesford. *Rouen*.—1, H. Dowsett. 2, H. Taylor, Soham. 3, No competition.
GESE.—1, C. Thurnall. 2, J. Tebbitt, Coton. 3, Withheld.
TURKEYS.—1 and 2, Special Local Prize, E. Arnold, Whittlesford. 2, T. Gunnell, Milton. 3, G. Jonas, Ickleton. *hc*, W. Wright, Fulbourn.

PIGEONS.

CARRIERS.—1, H. Yardley, Birmingham. 2, H. M. Maynard, Ryde. 3, A. Storror, Peterborough. *c*, H. M. Maynard; W. Minson, St. Ives.
POUTERS.—1, W. Minson. 2, W. Nottage, Northampton. 3, H. Yardley.
TUMBLERS.—1 and 2, J. M. Braid, Cambridge. 3, H. Yardley. *hc*, H. Yardley; H. O. Crane, Oxford (2); J. M. Braid.
BARBS.—1 and 3, H. Yardley. 2, W. Minson. *hc*, H. M. Maynard (2). *c*, P. Wise, Oxford.
JACOBINS.—1, H. M. Maynard. 2, A. Storror, Peterborough. 3, W. Minson.
FANTAILS.—1, J. Walker, Newark. 2, H. M. Maynard. 3 and *hc*, H. Yardley.
TURBOTS.—1, H. Yardley. 2, W. Minson. 3, No competition.
DEACONS.—1 and 3, W. Minson. 2, H. Yardley.
ANTWERPS.—1, C. F. Copeman, Birmingham. 2 and 3, H. Yardley. *hc*, F. R. Hall, Cambridge; W. B. Bull, Newport Pagnell. *c*, W. Minson.
ANY OTHER VARIETY.—1, J. M. Braid, Cambridge (Ice). 2, H. Yardley (Tintrelles). 3, W. Minson (English Owls). *hc*, H. Yardley (White Owls); W. Minson (Isabels). *c*, T. C. Marshall, Peterborough (Maggies).
SELLING CLASS.—1, F. R. Hall (Barbs). 2, W. Minson (Red Swallows). 3, T. C. Marshall. *hc*, A. Storror, Peterborough (Barbs); L. Watkin, Northampton. *c*, W. Bulmer, Spalding (Carriers).

Mr. Edward Hewitt, of Sparkbrook, Birmingham was the Judge.

DARLINGTON POULTRY SHOW.

ALTHOUGH in both poultry and Pigeons the entries were not numerous, some of the birds shown were exceedingly choice. With regard to the poultry, the Judge recommended that another year there should only be one hen instead of two as this year.

SPANISH.—1, C. W. Brierley, Middleton. 2, W. Harvey, Sheffield. *hc*, Birch and Boulter, Sheffield.
BRAHMA POOTRA.—1, E. Leech, Rochdale. 2, W. Harvey.
COCHIN-CHINA.—1, J. White, Whitley, Wakefield. 2, C. W. Brierley. *hc*, W. Brierley.
DORKINGS.—1, W. Harvey. 2, J. White, Warlaby, Northallerton. *hc*, J. Stott, Healy, Rochdale.
GAME.—*White and Piles*.—1, C. W. Brierley. 2, F. Sales, Crowle. *Black-breasted and other Reds*.—1, C. Chaloner, Whitwell, Chesterfield. 2, C. W. Brierley. *hc*, F. Sales. *c*, J. C. Coupe, Doncaster. *Duckwings and other Greys or Blues*.—1, C. Chaloner. 2, F. Sales. *Any variety*.—Cock—1 and 2, C. Brierley. *hc*, E. Ayckrod, Eccleshill, Leeds; T. Colley, Conisbrough; C. W. Brierley.
HAMBURGS.—*Silver-spangled*.—1, Ashton and Booth, Mottram. 2, C. Wilson, Armthorpe. *Golden-spangled*.—1, Birch and Boulter. 2, Withheld. *Silver-pencilled*.—1, W. Cooper, Doncaster. 2, W. Appleyard, Low Ackworth.
GAME BANTAMS.—1, W. Roe, Newark. 2, F. Sales. *Any other variety*.—1, R. H. Mottram. 2, W. Harvey. *hc*, T. C. Addey, Askern.
ANY VARIETY.—*Chickens*.—1, Birch & Boulter. 2, W. G. Lysley.
GESE.—1, B. Leech. 2, J. White.
DUCKS.—*Aylesbury*.—1, E. Leech. *Rouen*.—1, E. Leech. 2, J. White. *Any other variety*.—1, W. Binns, Pudsey, Leeds.
TURKEYS.—1, B. H. Brooksbank, Tickhill. 2, E. Leech.
PIGEONS.—*Carriers*.—1, E. Brown, Sheffield. *hc*, W. Delaney, jun., Doncaster. *Pouters*.—1, W. Harvey. *hc*, H. Yardley, Birmingham. *Tumblers*.—1, W. Harvey. *hc*, H. Yardley. *Jacobins*.—1, W. Harvey. *hc*, W. Parkinson, Doncaster; J. Smithers, Sheffield. *Tumblers*.—1, H. Yardley. *Trumpeters*.—1, W. Harvey. *Fantails*.—1, J. Walker. *hc*, H. Yardley. *Owls*.—1, W. Harvey. *hc*, H. Yardley. *Barbs*.—1, W. Harvey. *hc*, H. Yardley.

JUDGE.—Mr. James Dixon, North Park, Bradford.

THORNE POULTRY SHOW.

This Show was held June 19th. The following is the prize list:—

DORKINGS.—Cup, W. Harvey, Sheffield. 2, J. White, Warlaby. 3, F. S. Arkwright, Sutton Scarsdale.
SPANISH.—1, J. Powell, Bradford. 2, J. Leemin, Broughton. 3, J. Thresh, Bradford.
COCHINS.—*Cinnamon or Buff*.—Cup, H. Lacy. 2, A. Bamford, Middleton. 3, H. C. & W. Mason, Drighlington. *Any other variety*.—1 and 3, J. Raitton, Fallowfield (White). 2, C. W. Brierley, Middleton.
BRAHMAS.—*Dark*.—Cup, H. Lacy. 2, W. Schofield, Bradford. 3, W. Swann, Bedlington. *Light*.—1, Withheld. 2, W. Whiteley.
GAME.—*Black Reds*.—Cup and 2, C. Chaloner, Whitwell. 3, J. Mason, Worcester. *Brown Reds*.—1, C. Chaloner. 2, C. W. Brierley. 3, W. Boyes. *Duckwings, or other Greys or Blues*.—1, Sales & Bentley. 2, C. Chaloner. 3, W. Boyes. *White and Piles*.—1, C. W. Brierley. 2, R. Walker. 3, Sales & Bentley.
HAMBURGS.—*Gold or Silver-spangled*.—Cup, H. Beldon. 2, L. H. Ricketts, Banwell. 3, F. Rollinson, Lindley. *Gold or Silver-pencilled*.—1, H. Beldon. 2, L. H. Ricketts. 3, F. Rollinson.

HOUDANS.—1, H. Feast. 2, J. G. Milner, Bellerby. 3, R. B. Wood, Uttoxeter.
CREVE-CEUVE.—1, W. Dring. 2, Mrs. J. Cross. 3, R. B. Wood.
ANY OTHER DISTINCT VARIETY.—1, H. Beldon (Polands). 2, W. F. Addie, Fulwood (Black Hamburgs). 3, W. Harvey.
GAME BANTAMS.—*Black or Brown Reds*.—Cup, T. C. & E. Newbitt. 2, W. F. Addie. *Any other variety*.—1, T. C. & E. Newbitt. 2, Rev. J. B. Knight, Danbury (Duckwings).
BANTAMS.—*Rose-comb, Clean-legged, Black or White*.—1, H. Beldon (Black). 2, R. H. Ashton (Black). *Any other variety*.—1, W. Harvey. 2, J. Watts.
DUCKS.—*Aylesbury*.—1, E. Leech, Rochdale. 2, J. Shillito, Sheffield. *Rouen*.—1, E. Leech. 2, J. White.
GEES.—1, J. Hepworth. 2, E. Leech.
SELLING CLASS.—Cock. —1, C. W. Brierley. 2, W. Harvey. 3, Master F. S. Robinson. *Hens*.—1, C. W. Brierley. 2, W. Harvey. 3, D. White, Driffield.

PIGEONS.

CARRIERS.—Cock. —Cup, E. Horner. 2, H. Yardley. *Hens*.—1, J. Hawley. 2, E. Horner.
POUTERS.—Cock. —1 and 2, E. Horner. *Hens*.—1, E. Horner. 2, W. Harvey.
TUMBLERS (Short-faced).—1, J. Hawley. 2, E. Horner.
JACOBIANS.—1, T. C. & E. Newbitt. 2, J. Hawley.
NUSS.—1, A. J. Sellars. 2, E. Horner.
TRUMPETERS.—1 and 2, E. Horner.
TURBITS.—1, J. Hawley. 2, E. Horner.
FANTAILS.—1, E. Horner. 2, J. Walker, Newark.
OWLS.—1, J. Hawley. 2, E. Horner.
BARBS.—1, E. Horner. 2, W. Harvey.
DRAGONS.—1, E. Horner. 2, J. Watts.
ANTWERPS.—1, H. Yardley. 2, C. F. Copeman, Birmingham.
ANY OTHER VARIETY.—1, A. J. Sells, Malton (Swallows). 2, W. Harvey.
SELLING CLASS.—1 and 2, J. E. Crofts, Blyth (Magpies).

RABBITS.

LOP-EARED.—*Bucks*.—1, W. H. Webb, Cosely (Longest ears in the Show 22½ by 4½). 2, T. C. & H. Lord, Huddersfield. *hc*, J. Hume, York. *c*, J. G. Hill, York; J. S. Clark, Hatfield; W. Allison, Sheffield; J. Baron, Nottingham, Doon 1 and Cup, A. H. Easton, Hull (ears 22½ by 4½). 2, T. C. & H. Lord. *hc*, F. Barnes, London. *c*, C. King, London; W. Conner, Leicester; H. Cawood, Thorne.
ANGORAS.—1 and Cup, W. Whitworth, jun., Longsight, Manchester. 2, W. Correy, Northampton. *hc*, A. H. Easton. *c*, W. Whitworth; W. H. Tomlinson, Newark; M. Marsden, Cleckheaton.
HIMALAYAN.—1, B. S. Rothwell, Rochdale. 2, S. Ball, Bradford. *hc*, W. Whitworth, jun. *c*, S. Ball; H. Cawood. *A. H. Easton*.
SILVER-GREY.—1, R. H. G. Wakefield. 2, J. Boyle, jun., Blackburn. *hc*, H. Munroe, Hull. *c*, J. L. Varley, York; R. H. Glew; Master T. G. Woodley, Thorne.
ANY OTHER VARIETY.—1, J. Irving, Blackburn (Patagonian). 2, A. H. Easton (Dutch). *hc*, C. King (Siberian). *c*, H. C. Bowman, Higher Broughton, Manchester (Belgian Hare); G. Johnson, Wadecroft, Kettering (Dutch); W. Whitworth, jun.
SELLING CLASS.—1, J. Wharton, York (Lop Doe). 2, C. Grail, jun., Thorne (Lop Buck). *hc*, A. H. Easton (Angora). *c*, C. King; Master G. T. Woodley Thorne (Silver-Grey); R. Leggett, Thorne; A. H. Easton (Lop Doe).

Of the many excellent Rabbits collected from time to time at the various shows, it is rare that seventy are found of such sterling merit and in such excellent condition and health; and with pleasure we compliment the exhibitors on the manner their specimens were forwarded for competition, contrasting very favourably with the state in which we have at times seen them. The Committee acted wisely when they decided to increase the number of classes, for exhibitors object to sending their specimens to be competing with some three or four other kinds; and hope the Committee of this and all other shows will infer from the success that even yet more variety will tend further to increase the entries. Seventy-two were made at Thorne this year, and only twenty-one last year. The pens were large, and with entire moveable front framework, affording easy and safe handling of the Rabbits, and this plan is worthy of imitation for many reasons.

Where all are excellent little need be said by way of distinction; and when such names as Messrs. Easton, King, Allison, Lord, Gravel, Hume, Cawood, Baron, and Tring were amongst the exhibitors of *Lops*, little short of perfection in the specimens forwarded could be expected; and in the class for bucks (thirteen in number) were found probably the best in England, with ears from 21 to near 23 inches, and all possessing those attributes in marking also so desirable. The does were by no means the less perfect in all properties, and to one of them, a beautiful tortoiseshell, was awarded the cup given for the best buck or doe of the Lop variety.

Angoras.—These showy animals were represented by some large well-woolled specimens, and were shown in excellent condition, and gave evidence of the grooming bestowed upon them, so essential to their appearance. They were all white; and to one (a doe), perhaps one of the largest we have ever seen, was awarded the cup for best Rabbit in the Show, Lops excepted; and the second-prize winner was a large silky animal.

Himalayan.—These were very good as a whole, and much more uniform in the marking than we at times meet with. The feet are frequently too much of the copper or grey shade. Those receiving awards were excellent representatives of the variety.

Silver-Grey.—In this class were exhibited some well-silvered animals, and some of them large; and this quality is not always to be met with combined with the very important one—viz., generality in the silvering, for at times the head and face are far too dark.

Any other variety.—This class contained a fine Patagonian, which took the first prize. The Siberian, Belgian Hare, and Dutch were all excellent specimens.

In the **Selling class** were Rabbits fully worth the prices affixed to them in the catalogue, and some valuable specimens.

We congratulate the Committee upon the great and encouraging increase in the entries, and hope their indefatigable

efforts, combined with the general courtesy and untiring zeal of their Secretaries, will continue to be fully rewarded.

JUDGES.—**Poultry**: Mr. J. Dixon, North Park, Clayton, Bradford. **Pigeons**: Mr. W. Massey, Spalding. **Rabbits**: Mr. C. Rayson, Ivy Lodge, Didsbury, near Manchester.

YORK BIRD SHOW.

THE above Show, held in connection with the York Gala, took place on the 12th, 13th, and 14th ult. The Exhibition was an entire success.

NORWICH.—*Clear Yellow*.—1, — Bunting, Derby. 2, J. Calvert, York. 3, Moore and Wynn, Northampton. *Clear Buff*.—1, Moore & Wynn. 2, — Bunting. 3, T. Barwell, Northampton. *Even-marked Yellow*.—1, Moore & Wynn. 2, C. Burton, York. 3, — Young, Knaresborough. *Even-marked Buff*.—1, Moore and Wynn. 2, C. Burton. 3, — Young.

YORKSHIRE.—*Clear Yellow*.—1, G. Blackston, Whithy. 2, H. Fryer, Baildon. 3, W. & C. Burniston, Middlesborough. *Clear Buff*.—1, W. Johnson, Northampton. 2, — Burton. 3, W. & C. Burniston. *Even-marked Yellow or Buff*.—1, — Burton. 2, J. Stevens, Middlesborough. 3, L. Belk, Dewsbury.

CRESTED NORWICH.—*Yellow or Buff with Green, Grey, or Grizzled Crest*.—1, Moore & Wynn. 2, G. Blackston. 3, — Reed, York. *Even-marked Yellow or Buff*.—1, T. Barwell. 2, — Triffitt. 3, Moore & Wynn.

JOUGRE.—*Cinnamon*.—1, W. Barwell. 2, T. Barwell. 3, — Young. **BUFF**.—*Cinnamon*.—1, Moore & Wynn. 2, W. & C. Burniston. 3, — Baines, York.

LIZARD.—*Golden-spangled*.—1, J. Taylor, Middlesborough. 2, — Triffitt. 3, — Baines. *Silver-spangled*.—1, L. Belk. 2, J. Goode, Leicester. 3, — Triffitt.

GOLDFINCH MOLE.—*Even-marked Yellow or Buff*.—1, — Hawman, Middlesborough. 2, L. Belk. 3, W. & C. Burniston. *Dark*.—1, J. Stephens. 2, — Cox, Northampton. 3, W. Burton.

ANY OTHER BREED.—*Clear-crested Yellow or Buff*.—1, — Briskham, York. 2, — Triffitt, York. 3, T. Barwell, Northampton.

YOUNG BIRDS.

NORWICH.—*Yellow*.—1, — Young. 2, — Triffitt. 3, — Carbutt, York. *Buff*.—1, W. Barwell. 2, — Baines. 3, — Quinn, York. *Even-marked Yellow*.—1, E. Todd, York. 2, — Burton. 3, — Middleton & Douglas, Northampton.

Even-marked Buff.—1, — Baines. 2, J. Goode. 3, Middleton & Douglas. *Dark-crested Yellow or Buff*.—1, R. Reed. 2, — Baines. 3, — Gibson, York.

NEST.—*Yellow*.—1, R. Simpson, Whithy. 2, — Todd, York. 3, W. Barwell. *Buff*.—1, Petty & Foster, York. 2, — Quinn. 3, — Reed. *Crested*.—1, — Goode. 2, Mrs. Calvert, York. 3, J. T. Thompson, York.

ANY SIX CANARIES IN VARIETY.—1, J. T. Thompson. 2, W. Barwell. 3, R. Simpson.

ANY VARIETY OF CANARY (Price with Cage not to exceed 15s.).—1, L. Belk. 2, — Gayton, Northampton. 3, T. Wandy, Norton.

FOREIGN BIRDS (Not less than twelve).—Extra, Mrs. Calvert.

BRITISH BIRDS (Not less than twelve).—1, Mrs. Calvert. 2, A. P. Wood, York.

PARTRIDGE.—1, C. Holstrip, York. 2, J. Clarkson, York.

GOLDENLOP (Moulted).—1, B. Calvert. 2, J. Calvert.

BULLFINCH.—1, J. Calvert. 2, Messrs. Burniston.

LINNET (Moulted).—1, Messrs. Burniston. 2, Messrs. Petty & Foster.

Three extra prizes were awarded—viz., to Mr. Stainton, of York, for a cage of White Thrushes; and to Mr. C. Waud, of York, for two organ cages of Green Linnets.

JUDGES.—Mr. G. J. Barnesby, Derby, and Mr. Cooper, York.

BIRMINGHAM POULTRY SHOW.

THE first annual Birmingham and Midland Counties summer Show of poultry and Pigeons, held June 25th to 28th, has proved a far greater success in bringing together the best specimens in the kingdom than was at first anticipated; in fact, the competition was so great as to necessitate the pens being placed so close to each other as to leave the avenues much narrower than was convenient for the visitors. Nevertheless, we are told the tent was 316 feet long by 40 feet in width. The pens used were those of Messrs. Turner, of Sheffield; and the tent was raised in a field opposite to the grounds where the Royal Horticultural Show was at the same time taking place. The receipts at the doors were, most unfortunately, considerably lessened by the nearly constant rain, hail, lightning, and thunder that prevailed on the first two days of the meeting. It was, indeed, a case of incessant downpour, such as perhaps never before was recorded in this district; but as, fortunately, the tent was pitched on high ground, the mishaps were comparatively trifling compared with what might have occurred had the surface of the Show-ground been a level. The entries reached a total of 1877 pens, the poultry alone being 915 pens.

The Coloured *Dorkings* were a very strong feature of the Show, Mrs. Arkwright and Mr. Lionel Patton taking the highest positions. *Cochins* were strong classes, Mrs. Allsop taking first prize in the cock class with a remarkably even-coloured bright Buff; Mr. Lloyd the second with a wonderfully well-developed bird, nearly as dark in shade as wetted cinnamon. In this class there were twenty-two entries. In a still larger class of hens the competition was very close; some unusually large birds were shown, which had unfortunately moulted of very irregular colour. Partridge *Cochins* were of the highest order, and the Judges expressed their opinion that this was one of the best represented breeds in the Show; here Messrs. Brierley and Taylor secured the honours. The White and Black *Cochins* were not equal to those seen at most Birmingham shows, the latter were especially poor. The Dark *Brahmas* were far better than the Light-coloured ones, and the competition throughout was very close indeed, and occupied a considerable part of the time allotted to the Judges, though even at first quite too brief for the trying duties they had to fulfil. *Spanish* fowls were strong beyond precedent, and evidently had received consider-

able attention prior to being sent to the Exhibition. The hens proved the cup-winners, and were birds such as are but rarely seen. Even in the Selling classes, the Spanish hens were conspicuous for their numbers, and equally so for excellence. In the Black or Brown Red Game class, specimens well shown from Nantwich and Melton Mowbray were successful, and Mr. Brierley's Red Piles were in first-rate order for competition. We can but rarely inspect so large and perfect a collection of *Hamburgs* as was shown, all five varieties being sent in excellent show trim. The Golden-spangled and the Black ones were conspicuously creditable. *Polands* and *Malays* were very short in numbers, but of the highest merit as to purity of breed and feather. The *Crève-Cœurs* were by far the best shown of the *French* breeds; and the same may be said of the Blacks among the *Bantams*. A few most meritorious Japanese Bantams were to be found in both the Variety, Selling, and Bantam classes. Among the chickens, the winning Dark Brahmas, Buff Cochins, Grey Dorkings, and Brown Red Game were well matured and truly feathered, and gave good proof, particularly in adverse seasons like the present year, what can be done by careful and constant attention.

Geese were shown in the most indifferent feather, but Mr. Lythall's American *Turkeys* were in their greatest splendour. Aylesbury *Ducks* were not by any means a weak class, but the Rouens were not in season for the show pen. A large variety of fancy *Ducks* competed for the silver cream-jug offered as a premium to this class. Of course a considerable proportion were out of colour, but the Whistling *Ducks*, Ruddy Shell *Ducks*, and Garganeys were in lovely condition.

Perhaps in fowls of this year there has rarely, if ever, been exhibited so early in the season, pens so praiseworthy as Mr. Lingwood's Dark Brahmas and Mr. Tomlinson's Buff Cochins.

Although from the unusual stress of weather great losses might fairly have been anticipated, thanks to good management we are told "all the deaths that took place were one fowl, a fancy Duck, and a Pigeon." When it is recollected how unfavourable was the weather from the very time Messrs. Hewitt and Teebay commenced their judging to nearly the hour of repacking the birds for their homeward journey, it certainly reflects much credit on those experienced amateurs who personally carried out the whole proceedings. We published the list of awards last week.

[We shall give next week a detailed report of the Pigeons, of which no less than 962 were exhibited.—Eds.]

SCOTCH AIR TUMBLERS.

In my last communication I promised that I would in a future letter endeavour to show "WILTSHIRE RECTOR" that his taste does not really differ so much from mine as his remarks implied. He evidently imagines that my chief fancy is for house Tumblers, but if he examines my first letter carefully he will find that I was compelled to adopt them more through the force of circumstances than from any real love I had for them at the time. Of the two classes, the house and Air Tumbler, I now hold, and always held, the Air Tumbler in the highest esteem—not the high-flying Tumbler, however, which merely tumbles, but the bird that performs up to a certain standard, which I shall endeavour to describe in the course of this paper. I would now, however, almost as soon think of breeding a modern Carrier from a Dragoon as I would think of breeding Air Tumblers to please me without the aid of the house Tumbler. I wish it, however, to be distinctly understood that I write only as an individual fancier, not as in any way representing other breeders, but simply describing my own views, tastes, and experiences.

The breed of Tumblers which "WILTSHIRE RECTOR" possessed when in Scotland some twenty years ago, is what we call the "Common Tumbler," and is undoubtedly the progenitor of not only the Air Tumbler of which I now write, but also of the house Tumbler, and so closely do they all resemble each other that it is impossible to tell the one breed from the other without seeing them perform. Indeed, the common Tumbler is the Air Tumbler proper, but from the vast superiority of some birds bred from the house Tumblers which turn out high flyers, over the usual quality of the common birds, such have been named Air Tumblers to distinguish them from their more plebeian brethren.

The common Tumbler is still abundant all over the country, and is an exceedingly hardy breed, many of them being kept in badly constructed lockyers, often placed against an exposed wall; and I have seen very good birds which had to forage for a considerable portion of their food. They are seldom trained to fly long, but being of a hearty disposition they take frequent short flights, and then mostly tumble moderately.

The common house and Air Tumblers are all pearl-eyed, generally small, dapper and trim, and are to be found of almost every colour. Red, or red-and-white, however, is the most common, and I think the best birds are generally to be found of this colour, at least I have known two first-class house Tumblers of red or red-and-white colour for one of any other colour. Blacks and

Yellows probably come next in numerical strength. Almonds are not scarce; and Blues of sound colour, although not so numerous, are still found. Irregularly marked Balds and Beards are often bred in a most unaccountable way, and I have even seen very well marked birds of those markings appear where the pedigree was known for several generations, and in which no bird of the marking could be traced. Whites with pearl eyes I have seen exhibited, but whether they would have continued pure in colour after their next moult in the hands of a purchaser I cannot say. There would, however, be no difficulty in breeding the colour, as there is an abundance of very light-marked birds to be found which, if persistently matched together, would soon produce pure white, and the *bull-eye* I should be afraid. The three classes are also alike in their mode of tumbling, being all Tumblers not Rollers—that is, tumbling in single turns; birds which roll are no doubt occasionally bred, but such are not characteristic of the breeds, and are not esteemed valuable.

In my last letter I endeavoured to show that all tumbling is a purely involuntary action—in fact, a disease if you will, but only a disease to the same extent as the huge crop of the Pouter, the wattle of the Carrier, or any other point in a fancy Pigeon, which in no way interferes with the general health of the bird, and which the fancier strives to cultivate to the highest possible degree of excellence. For tumbling alone, in some instances amongst house Tumblers the faculty has reached a point which can scarcely be improved upon, but as an immense crop does not make a perfect Pouter unless combined with other qualities, nor a huge wattle a model Carrier, so in the case of a perfect tumbling bird I should wish other qualities combined with that of mere tumbling. My idea of what would constitute a perfect performing bird would be one which would tumble either inside or out, high or low, once in about every 3 feet of flight, with the regularity of clockwork; the tumbles to be single, clean—that is right over, head under, no twisting, quick as a flash of lightning, and to be no impediment to progress, but allowing the bird to soar, and last of all, and by no means least, the performance never to be of doubtful fulfilment, but certain to come off on every occasion. Such a bird is purely ideal, as I confess I never saw one which met all the requirements. The nearest approach to it coming under my observation, however, is the Air Tumbler bred from house Tumblers whose performances and general characteristics were so ably described in your Journal a number of years ago by the late Mr. Brent. Good performers of this class should tumble at a rate of not less than thirty times per minute; if they can do a greater number all the better, provided they can keep in the flight, but I would rather have a bird doing forty tumbles a minute, taking flights of half an hour, than one which could do sixty times per minute, but only be able to keep in the air about that length of time altogether.

The tumbling should also be regular, not a great deal at one time and nothing at another, and as quick as thought; and it is as a test of these points that I think there is nothing to equal the moment hand of the watch, for a really good bird when once fairly settled to its work should be so steady that if the eye be fixed on it for any one minute the result obtained by the watch should give a fair average of what he will do throughout the whole time of flight. The watch is also most useful to train the eye, and to give uniformity of ideas amongst different breeders, for unless a bird make the somersault with very great rapidity it will never count very well by time. Indeed, I have seen birds which seem to be tumbling without the slightest intermission, and falling out of the flight seemingly through perfect excess of it, and yet when timed these would not exceed twenty times a minute, but we find birds which do forty times and more in the minute without falling out of the flight in the slightest, farther than taking care to keep the inner circle. The former bird, however, loses time in the little extrasweep which it gives when going over, which also tends to bring it down out of the flight. I do not think it likely that Scotch Tumblers fly so high as some do in the south, at least I have never seen any of them go out of sight on a clear day, unless over the tops of the surrounding houses, before getting settled into their proper flight; neither would I desire them to do so, as I look on high-flying as only useful to enable the tumbling to be observed, and if the birds themselves disappeared their performance could scarcely be seen.

I find, however, that birds which can do from thirty to fifty tumbles a minute go quite high enough for my ideas, for although I live in the centre of a manufacturing town where houses are high and close, they soar sufficiently to enable me to watch their movements without having my view of them much interrupted, and although I am quite the reverse of being short-sighted, they go high enough to make it difficult to note the performances of each individual bird, unless where a considerable variety of marking and colouring exists; and for this reason, where birds are kept merely for their tumbling, I think that it is not only allowable but desirable to keep a number of irregularly marked or splashed birds as well as birds of as many colours as possible, and I have little doubt it is because fanciers of former times have found the same thing necessary, that we have now

amongst Tumblers a wider range of colour and marking than amongst any other breed of Pigeons whatever.

Although I approve of variety in colour and marking I am no advocate of bad colour, but desire to have every colour rich and good—a thing in no way difficult to accomplish with Tumblers of any kind to anyone who has a knowledge of breeding for colour. Indeed, it seems no easy matter to breed bad colour in Tumblers, for where do we find such Blacks, Reds, or Yellows as in this breed, in spite of their being often bred on wrong principles for the purpose of matching for tumbling properties? As to the length of flight which they would take if properly trained, I can say comparatively little, as I labour under the disadvantage of keeping them as feeders of Short-faces, and they must consequently be well fed. If the weather is good, however, and care be taken to make them fly in the morning before being fed, and after their flight shut up, they can easily be got to fly for half an hour or so, which is as long a time as I can afford to watch them. In wet weather, even when not raining at the moment, if the air is full of moisture they do not fly very readily, and it is then almost as well to keep them in. Young birds during warm sunny weather, if allowed entire liberty generally fly a good deal during the day, and as flying undoubtedly develops the tumbling, if I had separate accommodation for them I would be inclined to give them their full liberty up to a certain age.

As to the tumbling qualities of the two sexes I do not think there is any difference, but if there be, it is in favour of the hens. I never saw any Tumblers where only the one sex tumbled, but I should be inclined to think that in such cases the performances are of but rare occurrence in either sex—in fact, it would be difficult to tell which tumbled least. The bird that develops into a house Tumbler is generally, indeed almost in every case, for a time an Air Tumbler, and in my next letter I shall endeavour to describe the differences between the two kinds in tumbling properties and other points.—SCOTCH THISTLE.

SILVER DRAGOONS' BARS.

As I have frequently the honour of acting as a judge at Pigeon shows, I have been requested by several fanciers to state my views on this subject. Mr. J. Percival, an old fancier, and likewise judge, having already done so, I shall enter into no argument with anyone, for more than enough has been written and said on the subject. What I wish to put forth is, that it is by no means a new idea that Silver Dragoons should have black bars, for nearly forty years ago I had some, and they were then thought to be correct by a next-door neighbour, a Dragon fancier then of more than thirty years' standing. I hope other gentlemen acting as judges will give their opinion, without any further discussion, as to which way they would award the prizes, both varieties being present—viz., Silver Dragoons with brown bars and Silver Dragoons with black. Without any hesitation I say I should give the prize to those with the black bars, all other points being equal.—HARRISON WEIR, Peckham.

GUINEA PIGS VERSUS RATS.

SEEING some remarks upon this subject at page 492, I wish to state that a friend of mine has informed me that when he kept Rabbits in a place much infested by rats, he employed Guinea pigs for the protection of his young stock, knowing that there were some traditions on the subject. He had frequent opportunities of noting the results. As soon as a rat showed itself in the neighbourhood they at once gave battle *en masse*, upon the principle that *l'union fait la force*. Single encounters, however, were by no means rare; in this case the Guinea pig would go about his work in a business-like manner, following the tactics of a ferret, and if he did not kill his foe would drive him bleeding from the field. Certainly, if we examine a fine buck Guinea pig, he seems perfectly capable of coping with any animal of his size, his strength and agility being remarkable. My own experience is as follows:—I used to keep Rabbits rather extensively in a large, dry, and well-ventilated cellar or basement, in which I had frequently seen rats. A portion of this was railed off for the use of newly-weaned Rabbits, a rat's peculiar weakness, as fanciers know well, taking the precaution to allow two or three Guinea pigs to keep them company; and during the whole time (some two or three years) I never had a single one killed, and never saw the nose of a rat in my rabbitry, though there were plenty in the other cellars, and even holes communicating with the one I used. Whether their peculiar odour was the deterrent or not I cannot say. I think that these cases show that the idea is not quite such a delusion as our worthy editors suppose.

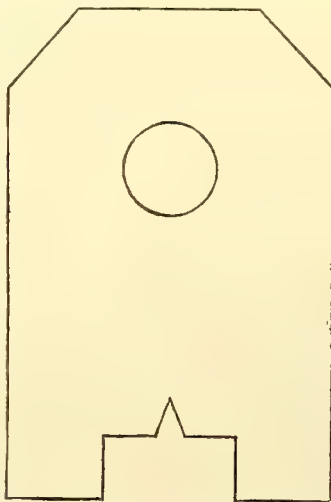
Guinea pigs, in my opinion, have not as a rule received their due from naturalists and writers upon the subject. They are generally dismissed as being pretty and so forth, but destitute of intelligence and other attributes necessary for qualification as "pets." One writer (I believe the Rev. J. G. Wood), says they

"make little noise." If this be the rule all mine have been distinguished exceptions; the irrepressible little creatures knew the step of their feeder as well as their friends and companions the Rabbits, and would set up such a chorus of squeaking as quite to place them outside the category of dumb animals. They resemble the housewife's "black beetles" in the inappropriateness of their name, inasmuch as the former are not beetles, and their colour is by no means black (it is sometimes white), and our little friends are not pigs, and do not come from Guinea. To such an extent is their restlessness carried that their young run about and eat on the very day they are born, the precocious little animals boasting as good a coat and eyesight as their parents. I will not trespass upon your space further than to say that I have found them as intelligent and interesting, apart from their usefulness as "scarecrows," as any of the numerous pets I have kept, but this, I imagine, was more owing to a little kindness and good treatment, which brought out their good qualities, than to any special happiness in the choice of specimens; nevertheless, I have never yet seen one to equal my original little friends Toby and his spouse Topsy.—SCIOLUS.

DOVER AND CINQUE PORTS POULTRY SHOW.—We are glad to see a report of the Committee, stating that after paying all expenses a balance of £30 has been carried forward to meet next year's expenses. A vote of thanks was deservedly bestowed on the Honorary Secretary, Mr. J. W. Bacon.

BEE MANAGEMENT.

IN your impression of the 6th inst. we have an account of some experiments on bees by Mr. C. N. Abbott, of Hanwell. His



method of putting wax on the frames is nothing new, only instead of an old knife a piece of zinc is generally used, which answers the purpose much better. I enclose you an outline of mine. The round hole is for hanging it up.

The second part of Mr. Abbott's article rather staggered me, I must confess; the idea of applying a paraffin lamp to a hive of bees suffering from dysentery at a temperature so low (19°), is surely something new, and may bring to mind the story of the poor countryman who put hot stones under his hive to induce the bees to swarm. Be that as it may, I will follow the example of neither. It is true I am not much of an apiarian, although I keep a few

hives and have read a good deal about bees; but if ever I should be so unfortunate as to have a hive like that described by Mr. Abbott, I should most certainly give the few remaining half-dead bees notice to quit, and take better care next time I had a weak stock to feed.

Autumn feeding is best, but when a stock cannot be got up to the desired weight without danger, an extra covering and a dry place to winter in have many a time been of service to me; besides, I am afraid were I to follow Mr. C. N. Abbott, I might get my fingers burnt.—NOVICE.

VALUE OF FANCY POULTRY.—By thus keeping a high standard of artificial points, below which a bird is comparatively valueless, conventionally perfect specimens will always be few; and we ensure a large number of birds which in these particulars are below par, but which possess all the *economic* merits of the variety to which they belong, and which are available for purely commercial purposes at a very moderate price. That celebrated breeders are often glad to dispose of such extra stock at only a few shillings over the price of ordinary fowls is notorious; and as the hiring of a good ram at a high price is directly remunerative in the increased fleece and mutton produced, so the effect in the case of poultry is equally capable of being calculated. Supposing a farmer's breeding stock of one ordinary cock and seven hens is worth £1, or 2s. 6d. each bird, the difference in value of a fair Dorking cock at £1 and seven Brahma hens at 10s. each (and we have often been glad to sell pullets possessing

every desirable quality, but useless for show, at this price), will be £3 10s.; and if all their eggs were set and reared for market, this extra cost would be many times repaid in the extra weight, hardness, and early maturity of the produce. And though these parent birds would be such as by the amateur are vulgarly called "screws," they are such as will never be reared by the mere farmer. The birds of fanciers attain a size which is never kept up long by the commercial breeder, simply because they get such food as the breeder or farmer will never give. The best milk, the best meal, eggs, meat, assiduous care—are all devoted to them; and the despised amateur thus maintains the stock which furnishes the raw material for all real improvement in market poultry.—From WRIGHT'S *Illustrated Book of Poultry*, for July.

OUR LETTER BOX.

LIGHT BRAHMAS AT BIRMINGHAM.—Mr. J. Rodbard, Aldwick Court, Wington, Bristol, writes to say that the cup and first prize for Light Brahma hens, in Class 14, were taken by him, and not by Mr. T. A. Dean.

LICE IN TURKEYS (*A Subscriber*).—These vermin in poultry are effectually destroyed by thoroughly dusting flowers of sulphur down to the roots of the feathers twice or thrice, with the interval of a day between each two dustings. The best course of procedure, however, when you detect lice, is to give immediate relief by putting a little sweet oil with the finger on the poll of the head and under each wing; then let the birds have a dust bath. Thoroughly dry coal ashes are best for this bath, and mix a pound of flowers of sulphur with the ashes.

FOOD FOR CHICKENS (*Little Chickens*).—The best food you can give little chickens is curd, chopped boiled egg, bread and milk, and cooked meat chopped fine.

PURPLE LUMES ON DEAD FOWLS (*Stoney Fields*).—Your fowls pick up something that disagrees with them, and they are not in condition to get over it. We advise you to alter your food. Give ground oats or barley meal morning and evening, Indian corn at midday, and discontinue the scraps at present.

INTRODUCING A LIGURIAN QUEEN (*H. F. R.*).—We would advise you not to attempt substituting a Ligurian queen for a black queen in the case of a swarm. We do not think it at all practicable. Nothing is easier than to catch the queen of a swarm: you have only to hive the swarm, and then dash them out on the ground and watch for the queen. If you put the empty hive near them you will see her marching towards it. We have often caught queens in this way, young and old. If you fall in seeing her the first time dash them out again, and so on till you see her. But although it is easy enough to catch the old queen, we doubt very much whether the bees would take another in her place. Perhaps some of the readers of this Journal have had some experience in this direction; if so, will they kindly give it? An old hand would try it by substituting another queen while the bees are on the ground and watching the issue. The instinct of fear does certainly paralyse bees, so that wonderful things can be done with them at such times. But we would not make the first trial with a valuable Italian queen. As you confess yourself a novice we should not advise you to attempt it. There are generally a quantity of drones with all swarms, but this would not matter the first year, because your Italian queen would be impregnated already when you bought her. In the case of a common straw hive, being an old stock, you cannot catch the queen without driving; but when driven the queen can be as easily caught as in the case of a swarm. We would then return the bees and put them on their old stance. Next cut out a piece of the straw at the top of the hive together with the comb attached to it, so as to allow for the admission of a "cage," into which we would slip the Italian queen as soon as the bees had well discovered their loss. We believe you can procure one of these queen-cages from the Messrs. Neighbour, the same as were used by the late Mr. Woodbury. The queen must be left in this cage for a day or two, and then liberated. In the case of a bar-and-frame hive you may catch the queen at any time you please, and substitute the Italian queen by means of a cage as described above. The month of August or September we think far better than before for substituting these queens. They will almost immediately begin to lay (especially if you quicken them by feeding), and not wait till the following spring. Maiden swarms are exceptional in this country. They rarely issue from any but early May swarms, and are seldom worth anything. We have had them several times, but consider them a misfortune. They will issue sometimes as early as the middle of June, but rarely before July.

CATS INVADING (*T. S.*).—The best

mode of excluding them was published by us some time since; we republish it for the aid of you and others—"The grandest discoveries have ever been of the simplest character. Fasten wire-netting flat on the top of the wall or fence, like a coping, projecting 2 feet on each side—if it bend down by its own weight and form an angle so much the better—I have for now six months been able to defy all the assaults of the enemy. I have seen many a grimaldin, perched in a tree, with wistful eye view the landscape o'er; but never yet has one managed to cross. It might be asked, Why have the wire on your own side too? Stop a bit; the foe may get in through a gate or window carelessly left open, and then, if anyone is fond of what our neighbours call 'le sport,' if he admires feats of agility, he will wish to keep the intruder from getting out immediately. Let him close the gate and begin."

SMELL OF PAINT (*Alice*).—Sprinkle a little chloride of lime on some hay, and place it on a plate in the newly-

painted room. It is said that it will remove the smell.

COWS AND PIGS (*Novice*).—We cannot tell you how you "ought to balance their numbers." "Every cow should fatten one pig," is an old rule and a

good one—that is, the daily product of a good cow should be in butter-milk and whey enough to feed one pig.

ERRATUM.—NUMBER OF DRONES IN A HIVE (*M. F. H.*).—In our reply last week (page 532) under this heading, we are, by a printer's error, made to utter a libel against many of the first authors on bees. Instead of asserting that "We do not know of any reliable author on bees who much understates the number of drones, &c.," we wrote that we do not know of any who much understates the number, thus meaning to uphold their judgment rather than to cast a stigma upon it.

SHEEP (*Cosmopolite*).—Milburn's "Sheep and Shepherding" is a very good little volume.

STALL-FEEDING COWS (*Teignmouth*).—"The Cow," by M. Milburn, is an excellent book, and includes stall-feeding. There is also a very superior essay in the "Quarterly Journal of Agriculture," vol. i., page 170, entitled "On House and Yard-feeding Cows for the Supply of Milk."

METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	A.M.				IN THE DAY.					Rain.
	Baromet. at 3 p.m. and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Tem- perature.		Radiation Temperature		
		Dry.	Wet.			Max.	Min.	In sun.	On grass	
1872. June. and July	Inches.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	In.
We. 26	29.867	64.4	54.0	S.W.	61.6	67.5	52.8	117.9	52.0	0.180
Th. 27	29.995	63.8	55.8	S.W.	60.2	68.9	48.9	121.5	47.2	0.250
Fri. 28	29.814	63.2	57.5	W.S.W.	60.5	71.2	55.4	121.3	56.0	—
Sat. 29	29.954	61.3	52.8	W.	59.3	73.3	46.5	130.5	42.3	—
Sun. 30	29.972	67.1	57.1	S.	61.0	75.3	45.9	120.9	41.9	0.180
Mo. 1	29.836	59.7	56.6	W.	62.8	71.9	57.1	120.1	55.5	—
Tu. 2	29.980	65.1	53.6	W.	61.9	75.0	55.2	130.3	52.6	—
Means	29.917	63.4	56.2		61.1	72.0	51.7	123.2	49.6	0.569

REMARKS.

26th.—Fine morning; frequent showers, and some of them rather heavy, during the afternoon; fair evening.

27th.—Fair but cold in morning; frequent and heavy showers in the afternoon and evening.

28th.—Very windy morning, but fair; and getting more so gradually to the evening, which was fine.

29th.—A lovely day, sunny and bright, but not too hot.

30th.—Rather thick in the morning; fine and bright in the middle and after part of the day; rather cloudy in the evening.

July 1st.—Heavy rain in early morning; but getting gradually finer till mid-day, after which the weather was splendid; but rain again at midnight.

2nd.—Slight rain early; but afterwards a most agreeable day, sun bright and warm, but not oppressive.

Not quite so warm as the two previous weeks, although the temperature in the sun is higher than any week this year; but there having been more movement in the air and frequent showers, this excess of radiant heat has not materially affected the temperature of the air.—G. J. SYMONS.

[COVENT GARDEN MARKET.—JULY 3.

WHAT few changes have occurred here are scarcely worth quoting. Hot-house fruit is scarcely so good a trade as last week.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	1	sieve	0	0	0	Mulberries.....	1	0	0
Apricots.....	1	doz.	2	0	3	Nectarines.....	1	0	15
Cherries.....	1	per box	2	0	4	Oranges.....	1	0	10
Chestnuts.....	1	bushel	10	0	20	Peaches.....	1	0	24
Currants.....	1	sieve	0	0	0	Pears, kitchen.....	1	0	0
Black.....	1	do.	0	0	0	Pears, dessert.....	1	0	0
Figs.....	1	doz.	6	12	0	Pine Apples.....	1	0	0
Filberts.....	1	lb.	0	0	0	Plums.....	1	0	0
Cobs.....	1	lb.	0	6	1	Quinces.....	1	0	0
Gooseberries.....	1	quart	0	6	0	Raspberries.....	1	0	0
Grapes, hothouse.....	1	lb.	3	0	7	Strawberries.....	1	0	5
Lemons.....	1	100	7	10	0	Walnuts.....	1	0	25
Melons.....	1	each	5	0	10	ditto.....	1	0	2

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	1	doz.	4	0	6	Mushrooms.....	1	0	0
Asparagus.....	1	100	4	0	8	Mustard & Cress.....	1	0	2
Beans, Kidney.....	1	per 100	1	0	2	Onions.....	1	0	0
Broad.....	1	bushel	0	0	0	Pickling.....	1	0	0
Beet, Red.....	1	doz.	1	0	3	Parsley per doz. bunches	1	0	4
Broccoli.....	1	bundle	0	9	1	Parsnips.....	1	0	1
Cabbage.....	1	doz.	1	0	1	Peas.....	1	0	2
Capsicums.....	1	100	0	0	0	Potatoes.....	1	0	5
Carrots.....	1	bunch	0	6	0	Kidney.....	1	0	8
Cauliflower.....	1	doz.	2	0	4	New.....	1	0	8
Celery.....	1	bundle	1	6	2	Radishes.....	1	0	0
Coleworts.....	1	doz. bunches	5	0	7	Rhubarb.....	1	0	6
Cucumbers.....	1	each	0	6	1	Salsify.....	1	0	1
pickling.....	1	doz.	0	0	0	Savoy.....	1	0	0
Endive.....	1	doz.	2	0	0	Scorzoneria.....	1	0	1
Fennel.....	1	bunch	0	3	0	Sea-kale.....	1	0	0
Garlic.....	1	lb.	0	8	0	Shallots.....	1	0	4
Herbs.....	1	bunch	0	8	0	Spinach.....	1	0	4
Horseradish.....	1	bundle	5	0	7	Tomatoes.....	1	0	4
Lentils.....	1	bunch	0	0	2	Turnips.....	1	0	0
Lettuce.....	1	doz.	0	9	1	Vegetable Marrows.....	1	0	0

POULTRY MARKET.—JULY 3.

THERE is little alteration in the supply or price, but a diminution in the latter may be looked for daily.

WEEKLY CALENDAR.

Day of Month	Day of Week	JULY 11—17, 1872.	Average Temperature near London.			Rain in 43 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.	
			Day.	Night.	Mean.	Days.	m.	h.	m.	h.	m.	h.	m.	h.	Days.	m.		s.
11	TH	Royal Botanic Society's Show closes.	75.4	50.7	63.0	11	59	af 3	11	af 8	39	af 9	47	af 3	6	5	14	193
12	F		75.9	50.5	63.2	14	0	4	11	8	49	10	29	4	7	5	21	194
13	S		76.1	51.4	63.7	15	1	4	10	8	after.	11	5	9	5	28	195	
14	SUN	7 SUNDAY AFTER TRINITY.	74.5	50.5	62.5	15	2	4	9	8	18	1	55	5	9	5	35	196
15	M	ST. SWITHIN.	76.6	50.7	63.7	22	3	4	9	8	36	2	40	6	10	5	41	197
16	TU	Royal Horticultural Society, Fruit, Floral, [and General Meeting.	76.0	50.1	63.0	17	4	4	8	8	0	4	29	7	11	5	47	198
17	W		74.3	51.3	62.8	16	5	4	7	8	25	5	23	8	12	5	52	199
From observations taken near London during forty-three years, the average day temperature of the week is 75.5°; and its night temperature 50.7°. The greatest heat was 94°, on the 17th, 1834; and the lowest cold 33°, on the 17th, 1863. The greatest fall of rain was 1.60 inch.																		

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ON GROWING AND GATHERING ORNAMENTAL GRASSES.



SHORT time ago, a correspondent said that he had just seen "a collection of dried ornamental Grasses, very interesting and highly deserving of notice, but," continued he, "I should like to know a little more about them, and whether they are easily grown, and dried in the condition of those exhibited." If, therefore, Mr. Robson and others who may feel interested in these Grasses, will kindly accept just "a little more" about

them, I will try to state briefly what I have learnt by eight or nine years' experience in growing them.

How and when to sow the seed are, as might be expected, matters of importance. Never sow it thickly, for there is often some feature of beauty in the habit of a Grass only developed by virtue of allowing room for free and unentangled growth. All this is lost, and more also, by a Mustard-and-Cress style of sowing; just as the beauty, bloom, and duration of annuals are provided against by dooming them to spindle in dense rings round their little central stick!

Seeds of the hardy Grasses may be either raised in pots, and without being drawn, or sown at once in the open ground, the utmost care being taken that the germinating seeds be never allowed to get dried. By sowing the seed upon well-broken earth, and afterwards gently raking it over, I have found enough seeds covered lightly to make a thick-enough crop. The best time to sow the hardy Grasses will be found to vary for different kinds.

A finer development of some will be obtained by sowing the seed as soon as it is ripe, in June or July. The young plants will appear during a period of wet weather, will get stocky by the autumn, stand the winter with the Wheat, have roots below March dust, and bloom before they can well be burnt-up. I say burnt-up advisedly; for Grasses want something of sunshine and open air, and should not be grown in dark places which are all well enough for Ferns and Mosses.

A few very pretty Grasses that come stronger when allowed to stand the winter are *Agrostis nebulosa* and *A. pulchella*, *Bromus brizæformis* and *B. lanuginosus*, *Lagurus ovatus*, *Hordeum jubatum* (perennial), and *Hordeum myuroides*.

Other commendable sorts which have escaped in mild winters, but certainly done well for spring sowing, are *Brizopyrum siculum* (most bonnie), *Briza maxima* and *B. minima*, and *Agrostis laxiflora*. *Phalaris paradoxa*, *P. minor*, and even *P. canariensis* may be used, but should not be overgrown. The last-named is the familiar Canary seed, and a bunch of the ripe ears which I possess is very striking among the more solid ornamentals. The species of *Chloris*, *Eleusine*, *Panicum*, *Pennisetum*, and *Sorghum* are but half-hardy, and possess more or less a tropical luxuriance of growth. I have to treat them to a hotbed until the end of May, when they go out to some sunny spot under a south wall. The varieties of *Chloris* are all very curious,

the ears consisting of a number of radiating arms in various modifications. *Chloris radiata* (when true), *cuculata*, and *truncata* are amongst the most distinct that I have met with. To be reckoned as a little gem among half-hardy Grasses is *Stipa elegantissima*. Each awned grain stands upon a delicately-feathered footstalk, the form of the ear resembling that of some of the Oat Grasses.

The time to gather Grasses for ornamental purposes is a matter of great importance. Some sorts dry to the best advantage when cut almost before they bloom at all; for at the least development beyond the flowering stage they will when dry fall away at a touch. The Barley Grasses (*Hordeum*) and the *Pennisetums* should be taken even before the heads are quite out of the sheath-blades. Others are best preserved when cut as the inflorescence expands, say half along the ears. This applies to *Bromus brizæformis* and *lanuginosus*, *Brizopyrum siculum*, and all the *Brizas* from maxima to minima. The *Chloris*, *Eleusine*, and some of the *Panicum* species, should not stand beyond their bloom. If cut too soon these would not preserve their form nor fully show it, and if left beyond would too easily fall to pieces. Some Grasses, again, are much more beautiful if left to perfect their seed before being cut, otherwise the heads will more or less shrink up and close. This would be so with *Agrostis nebulosa* and *pulchella*, while *Lagurus ovatus* may, with advantage, be also left till ripe; so may some of the sorts of *Panicum* and *Sorghum*, for they bear grain distinct enough to form one feature of attractiveness.

As to bleaching dried Grasses after the manner of skeleton leaves and seed-pods, the only method I ever tried was that of steeping them for a time in a solution of chloride of lime until the tissues seemed whitened, and were so when dry. The time required has seemed to vary, but care must be taken not to overdo the specimens, or they will be injured in the process. I have no doubt that, like myself, anyone experimenting will soon learn to pick his way after a few of those little troubles that make one wise.

I have named but a few out of the Grasses I have grown, but these are abiding favourites; and although I have beauties far more rich and rare among my *Auriculas* and other florists' flowers, still the lowly graces of the family of the Grasses have a winsomeness of their own that does not weary.—F. D. HORNER, *Kirkby Malzeard, Ripon*.

FIGS IN POTS.

I THINK if anyone were to see my Fig trees just now they would agree with me, that the proper way of cultivating them is to grow them in pots plunged in the soil. Figs in pots unplunged require great attention as to watering, feeding, &c., and often drop their fruit. Even where the fruit on pot trees is seen in a ripe state it is generally small, and deficient in flavour. On the other hand, Figs planted out, as a rule, grow too strongly to fruit well till of considerable age. In large pots plunged deeply enough

to hide the rim of the pots, Figs root through and over the pots into the soil, being more secure from sudden changes; whilst, if growing too freely, they are easily checked by cutting the roots or replunging them the following winter. I think few have any idea how many fruits a Fig thus managed will produce, or how superior it is in quality.—J. R. PEARSON, *Chilwell*.

NOTES ON ROSES.

My experience with regard to Roses differs at times so much from that of your correspondent, the Rev. W. F. Radclyffe, that I hope he will pardon me asking the opinion of some other Rose-growers with regard to Perfection de Lyon, Madame Chirard, and Baron Chaurand, which I do not possess, and which I have never seen exhibited, or, if I have, they have never attracted my attention. Moreover, when last winter I asked fifteen Rose-growers for their lists of the twelve and thirty-six best Roses, Madame Chirard and Baron Chaurand were not mentioned at all, and Perfection de Lyon only once, though I had 113 names sent to me. Leopold II., Lord Herbert, and Princess Christian were also not mentioned in the lists. The latter has always seemed to me too loose and thin-petalled; the other two are capable of being good Roses, but uncertain.

Surely, too, there must be something radically wrong in the treatment of Roses to require their being cut over three or four times to get rid of orange fungus. Nothing conduces so much to orange fungus as covering over the stems too much during winter for the sake of protection. Better lose a few from the effects of frost than let their constitution be impaired by over-protection. Moreover, it induces the roots to come up too much to the surface of the ground, and then, if the mulching is removed during the summer, the roots are burnt if hot dry weather comes on, and mildew is the result, followed by an increased dose of orange fungus. I do not wish to find fault with the system of mulching with manure in the winter, but I wish to caution persons against overdoing it, and especially against covering over the beds with a quantity of long manure, and then heaping soil over it to make it look more tidy.

I did not at Birmingham, when judging, see anything particularly good among the new Roses of 1871 and 1872. Paul's Princess Beatrice is promising. Among the newer Roses, Dupuy Jamain, Marquise de Castellane, Countess of Oxford, Paul Néron, Eugénie Verdier, Henri Ledechaux, Emilie Hausburg, Louis Van Houtte, Ferdinand de Lesseps, and Louise Wood are doing best with me. Dupuy Jamain is a Rose everyone ought to have. I certainly never saw a more beautiful box of twelve blooms than that shown by Mr. Cant at Birmingham.—C. P. PEACH.

SHADING.

On July 4th and 5th, and the early part of the 6th, we experienced all the parching effects of a tropical climate without the countervailing advantage of a great amount of vapour in the atmosphere. I felt sure on the morning of the 6th that there would be a change before night; but as that could not be depended upon, care was taken to tide all matters over until Monday, July 8th, in case the sun and dry heat should continue as scorching. The means chiefly resorted to were watering so far as we durst use water, shading out of doors, and whitening glass to keep what was beneath it cool. Most of the latter work was rendered useless by the sky suddenly becoming overcast at 2 p.m., and almost as suddenly continuous thunder was followed by delightful rains, which soon cleared the whitened surface from the glass. When the whitening is put on with milk instead of water it stands well, more especially if the glass is hot, and the whitened milk is daubed over with a dry brush after being applied in the usual way with a soft one. A little glue and some turpentine in the whitened water also stands well; but where it can be had, a few quarts of skim milk, with just enough of whitening in it to make it effective, will cover a great amount of glass.

In all plant houses the beneficial effect was felt of just a spattering from the syringe of white-coloured water outside the glass. It was used where the first rains would wash it off, as the shade was not desired in dull weather. In other cases, where a continuous slight shade was desirable, I have, on the whole, found nothing better than milk and whitening, not using more of the latter than necessary to give the requisite whiteness so as to shade.

Where neatness and durability are desired, attention should be paid to having the glass dry and warm from the sun. A

damp brush is used to lay on the white mixture, and as soon as covered—that is, daubed with the points of a stiff, dry brush, it looks as if it were painted or ground glass, and greatly, but gently, shades what is beneath it. Frequently we have thus done the outside of glass in May, and had to wash it off in October, as no ordinary rains would interfere with it. For instance, there is part of a corridor which has the front glass thus clouded nearly half way down from the top, leaving the lower part open, out of which one can look out and look in without obstruction; and more than one visitor has remarked, "How careful your workmen must be to bring the white blinds down in such a straight, uniform line all the way along; it is so satisfactory to the eye, instead of seeing them dangling at all heights." Of course, there was no blind, but at a short distance the appearance quite justified the surmise.

I have nothing to say against proper blinds and proper shading, only I know of no shading that can be so quickly applied as whitened water laid on with a syringe. Of course, that will be washed off by rains, and therefore I rarely use it for these temporary purposes where future rains would wash it off into a tank used for syringing, though when there is a filter it rarely tells the least on the colour of the rain water. Still, for a continuous slight shading it is well to fix the whitening in the way proposed, by using milk or size in various ways. To take this off in the autumn merely requires a good syringing, a rubbing with a cloth, another syringing, and all disappears. Mark! whitening or chalk, not lime, must be used for such purposes; the latter will damage the paint and putty, the whitening is harmless to both.—R. FISH.

MR. AYRTON AND DR. HOOKER.

It has been well known for some time past in certain circles, that a feud has existed between Mr. Ayrton, the Chief Commissioner of Works, and Dr. Hooker, the Director of the Royal Gardens at Kew; the object of the former being to displace the latter from a position he has so long held and filled with so much ability and satisfaction to the nation at large, and in particular to scientific men throughout the whole world. That Dr. Hooker should retire and that Mr. Ayrton should take his place, is a proposition too absurd for anybody else than Mr. Ayrton to entertain, but that is really what it would have come to, if Dr. Hooker had not resisted with all the force that is necessary in an encounter with such an antagonist. The matter has now become so notorious that the *Times* has alluded to the subject in the following leading article of Monday last:—

The scientific world has for some time been greatly disturbed by the difference which has arisen between Mr. Ayrton and Dr. Hooker, the Director of the Royal Gardens at Kew, and the public are concerned in anything which would interfere with the successful management of the gardens. The establishment at Kew is at once a source of great popular enjoyment and of invaluable service to science. The gardens are the finest of their kind in Europe, and the establishment is unrivalled alike in the extent, the importance, and the scientific results of its operations. The beautiful collection of plants renders Kew one of the most favoured holiday resorts in the neighbourhood of London. Last Whit Monday as many as 37,795 visitors entered the gardens; and it says much for the healthy and refining influence of such enjoyments that not a single case of drunkenness, riot, or mischief of any kind was reported. When the gardens were first opened to the public, in 1841, the total number of visitors during the year was 9000; but the number has now reached an average of nearly 600,000 a year. For any public money that may be spent at Kew the people receive, therefore, a rich return in the mere pleasure the gardens afford them; but this is really the least of the advantages derived from the establishment. Its museum and herbarium contain elaborate collections of the floras of all countries, and offer opportunities for the scientific and practical study of botany which can nowhere else be found. Kew is also of great practical service in promoting the distribution and proper cultivation of valuable vegetable productions. Eight or nine thousand living plants and about seven thousand seeds are annually sent thence to various parts of the world. The precious Quinine plant has thus been introduced into India, Ceylon, and Jamaica, and the commercial success of the experiment has been established. More than thirty gardeners trained at Kew are now employed in forestry, Cotton, Tea, and Cinchona plantations, and government gardens, and a far larger number are usefully employed in other parts of the world. In fact, there is not a horticultural establishment at home or abroad which would not acknowledge its obligations to Kew.

There is obviously only one means by which an establishment of this character can be maintained in full efficiency. It must be

committed to the charge of a first-rate man of science, and, within reasonable limits of expense, he must be entrusted with full control over its internal management. The gardens are, of course, under the control of the First Commissioner of Works, but it is evidently impossible that the changing occupants of that office should be sufficiently acquainted with botanical science to superintend the management of conservatories, or to direct the prosecution of scientific inquiries and publications. Kew has hitherto been exceptionally fortunate in this particular. The first Director, Sir William Hooker, not merely devoted the best labours of his life for twenty-five years to its interests, but expended considerable sums from his private fortune in completing its collections and prosecuting scientific researches in connection with it. During the greater portion of this time his son, Dr. Joseph Hooker, the present Director, gave him constant assistance alike in the gardens and in various voyages and travels for the purpose of botanical discovery. Dr. Joseph Hooker was naturalist to the antarctic expedition; he has explored regions in the Himalayas, in Borneo, in Western Asia, and South Africa, and has published for the Admiralty the botanical discoveries of various voyages, from those of Captain Cook to his own. One evidence of his devotion to the gardens, which are practically his father's creation, ought not to be omitted. The herbarium at Kew, while unrivalled in its collection of the floras of Asia, Africa, and America, had a comparatively imperfect collection of the floras of Europe. Three years ago a collection containing the very flora needed was offered for sale at Paris, and Dr. Hooker, at a cost of £400 from his own purse, presented it to the herbarium. It is neither creditable to the Government of a wealthy country, nor, perhaps, desirable, that its servants should be permitted thus to endow its scientific establishments out of their private incomes; but this narrative of the connection of Sir William and Dr. Joseph Hooker with Kew shows that their scientific services have been unusually generous and valuable, and that the country is very fortunate in possessing a Director for the gardens who is so completely identified with their past development and present excellence.

The public will hear, therefore, with regret that, since Mr. Ayrton's appointment to the post of First Commissioner of Works, such difficulties have arisen with respect to the management of the gardens as to occasion imminent danger of Dr. Hooker's resignation. We state the facts as they are at present known, subject to correction by future explanations; but the correspondence which has passed with the Treasury leaves little doubt of their substantial accuracy. One of Mr. Ayrton's first acts after taking office was to send a reprimand to Dr. Hooker. It is said the occasion was supplied entirely by the First Commissioner's own misconception, but, at all events, it was the first experience of the kind during Dr. Hooker's thirty years of service. But more material acts of interference followed. A previous First Commissioner had entrusted Dr. Hooker with the task of remodelling the heating apparatus throughout the establishment, and, in accordance with the Director's plans and estimates, a range of hothouses was constructed which is the completest in existence for scientific purposes. In 1871, without any notice being given him or any reason assigned, he was superseded in the control of this apparatus, and he was left to discover his supersession accidentally, through one of his own subordinates. On addressing an inquiry to the First Commissioner, he was simply informed that he had been superseded, and would have to govern himself accordingly. Dr. Hooker seems to have reason in arguing that to trust a cultivator with the care and treatment of valuable collections, and make him amenable to the opinions of others in respect of the apparatus he requires, is as wrong in principle as to refuse a surgeon his choice of instruments and hospital appliances. But, at all events, courtesy and justice alike required that Dr. Hooker should have been consulted before the change was made. It would seem, in fact, that in 1870 a Director of Works was appointed under the Board of Works, and that measures were taken to re-organise the management of the gardens. It is alleged that since then the Curator has been removed from his duties under Dr. Hooker without any previous communication, and has been empowered in various respects to act independently. Plans and estimates were submitted to the Treasury for extensive alterations in the museum at Kew without Dr. Hooker being so much as informed of the intention. These works, it is said, would have greatly embarrassed him as Director of the museum, and they were eventually abandoned on reference to Mr. Stansfeld. It is even alleged that Mr. Ayrton invited the Curator to accept a position which would have involved authority over the works at Kew, requesting him, at the same time, to keep the invitation from the knowledge of Dr. Hooker. In short, Dr. Hooker charges Mr. Ayrton with "evasion, misrepresentation, and mis-statements" in his communications on the subject to Mr. Gladstone, with ungracious and offensive conduct towards himself, and with acts injurious to the public service, and tending to the subversion of discipline. Mr. Gladstone, having been appealed to, referred the matter at last to a Committee of the Cabinet. After their inquiry, Mr. Ayrton was

told that Dr. Hooker should in all respects be treated as the head of the local establishment at Kew, of course in subordination to the First Commissioner of Works. But Dr. Hooker, not unnaturally, wishes to be more definitely informed, respecting his future duties and relations to Mr. Ayrton; and he has addressed distinct inquiries to the Treasury whether he is to have restored to him the control of the heating apparatus, whether he is to be consulted respecting estimates, whether he is still to be entrusted with the custody and distribution of scientific works, whether he is to be consulted in case of proposed changes in the position and duties of his subordinates, and in case of proposed works which would affect his duties and responsibilities, and whether he or the Director of Works is to have control in matters for which they are jointly responsible.

It is to be feared the matter is another instance of Mr. Ayrton's unfortunate tendency to carry out what he thinks right in as unpleasant a manner as possible. It may be that some rearrangement of the establishment at Kew was desirable, but, as a mere matter of prudence, Dr. Hooker's advice should have been asked, and his acquiescence, if possible, previously obtained. Mr. Ayrton ought to have been the more sensible of the wisdom of such a precaution since, as he frankly confessed on taking office, he is, as he considers it, happily ignorant of market gardening and other fine arts. We can only ask, as the Government has given us repeated occasion to ask, What is the use or need of provoking all this animosity? Even if a little more money is spent at Kew than a rigid economist would justify, the nation gets full value for the expenditure. But if existing establishments must needs be cut down, a task sufficiently unpleasant in itself might at least be discharged with courtesy and consideration towards eminent individuals. Perhaps such men are apt to be sensitive or even irritable; but when they have rendered to the country such services as those of Dr. Hooker, they have a claim on the consideration of their temporary superiors. It is not, after all, the money bestowed on such establishments as Kew which burdens the country and perplexes the Chancellor of the Exchequer, and it would be better, perhaps, to spare a round now and then from a "Woolwich Infant," than to deprive the greatest botanical establishment in the world of the man who is more competent to administer it than any other living botanist.

HORTICULTURAL CONGRESS AT BIRMINGHAM.

SULPHOZONE, A SUBSTITUTE FOR SULPHUR.

By CHARLES ROBERTS, F.R.C.S., &c.

(Communicated by Dr. MASTERS, F.R.S.)

SULPHUR in the sublimed, precipitated, or powdered form, is extensively employed by medical men, veterinary surgeons, and horticulturists, for destroying the animal and vegetable parasites infesting man, animals, and plants. The substance to which I have given the name of sulphozone (from its strong smell and powerful chemical action), in order to distinguish it from the sulphur of commerce, is a preparation containing free sulphurous acid as its active and essential principle.

For many years past large quantities of sublimed and powdered sulphur have been used in this country and on the Continent for the destruction of the mildew and blight attacking Vines, Hops, Roses, fruit, and other trees; and it is now, I believe, almost the sole remedy employed for that purpose, as no other has been found so generally effectual or so convenient of application.

From careful and often repeated series of experiments, I have arrived at the conclusion that the beneficial action is to be attributed to the presence of a small but variable quantity of free sulphurous acid (occasionally hyposulphurous acid), which exists as a constant impurity in the sulphur of commerce. Sublimed sulphur contains more acid than powdered crude sulphur, and is more certain in its action, while precipitated sulphur, being almost, or altogether, free from acid, is quite useless. I find that when substances are carefully purified from all traces of sulphurous acid by repeated washing with spirit and water, they are equally ineffectual in destroying mildew and other vegetable and animal organisms, and that seeds germinate as quickly and vigorously when sown in pure sulphur as in fine sand, and that moulds grow on the surface when a little organic matter, as flour, has been mixed with the sulphur. I find also that cheese mites are not destroyed by pure sulphur, but live and multiply indefinitely in cheese covered with sulphur; though they are immediately destroyed by commercial sublimed sulphur. On the other hand, when pure sulphur is impregnated with sulphurous acid, it destroys mildew and other minute organisms with an energy proportioned to the quantity of acid it contains, and it does not appear that one form of sulphur possesses any advantages over the others, provided the quantity of acid is uniform. Many other substances which contain no sulphur, when impregnated with sulphurous acid in a similar manner and to the same extent, are equally effectual in destroying mildew.

It has been observed that when a piece of silver leaf is suspended over a roll of sulphur, it is slowly converted into the sul-

phide of silver, and it has been inferred therefrom that sulphur vaporises at ordinary temperatures; and the theory has been advanced by a well-known vegetable physiologist, that the oxygen given off by the leaves of plants to which sulphur has been applied, oxidises it and produces sulphurous acid, and thus the action of sulphur in destroying vegetable organisms may be accounted for. But this theory is not borne out by my experiments. When silver leaf is suspended over pure sulphur it does not tarnish more rapidly than when suspended in the air, and its conversion into the sulphide by the roll sulphur may be explained by the fact that that substance contains free sulphurous and hyposulphurous acids, and sulphureted hydrogen, which are constantly escaping from it. When pure sulphur is applied to the leaves of plants no evidence of oxidation can be detected by either litmus, or starch and iodine paper. If oxidation were to take place under such circumstances, the product, if sulphurous acid in the first instance, would be immediately converted into sulphuric acid by further oxidation, and it could not escape detection. Further, precipitated sulphur, being in a much finer state of division than sublimed sulphur, would be more easily oxidised, and ought to prove the more potent agent; but practically it is found to be the least so.

Sulphur in various forms is used by medical men and veterinary surgeons for the destruction of the itch and other insects, and in the treatment of various diseases (as ringworm), caused, or accompanied by fungus growth infesting the skin and hair of men and animals; but sulphurous acid, in solution, is in many instances substituted for them on account of its more certain action. Many surgeons, indeed, believe that the beneficial action of sulphur ointment in the treatment of itch is to be attributed to the grease of which it is made, rather than to the sulphur it contains, and this is probably true, as the quantity of sulphurous acid is exceedingly small, and I find the action of the ointment is remarkably increased when the sulphur has been strongly impregnated with acid previous to being made into ointment, and this is equally true of its other applications in medicine.

In addition to its destructive action on organised bodies, sulphurous acid possesses a powerful chemical action on the organic and inorganic products of decomposing animal and vegetable substances, and the emanations from persons and animals suffering from infectious diseases; hence it is one of the most potent and valuable disinfectants we possess, and it appears to prevent the spread of small-pox, diphtheria, cattle plague, &c. Its qualities as a deodoriser are also very considerable. It attacks and destroys sulphureted hydrogen, and neutralises the strong smell of ammonia and other alkaline bases, but without losing its antiseptic properties or destroying their manurial value.—(Crookes.)

From my experiments and observations, and from the well-known properties of sulphurous acid, I conclude, therefore, that it is the acid, accidentally present in the sulphur, which is the active agent in the destruction of mildews and blights, and that the sulphur is only the medium for its application. This is a fact, not only of scientific interest, but of great practical and commercial importance, for under the mistaken impression that the sulphur itself is the active agent, great care and expense have been incurred to secure its freedom from acidity, which is by no means necessary.

Sulphur, like charcoal and many other substances, possesses the power of absorbing a large quantity of sulphurous acid, and by a modification in the refining process the acidity may be considerably increased, and the quantity of sulphur correspondingly diminished, and a more certain and uniform agent produced. For horticultural purposes, however, it is necessary to limit the quantity of sulphurous acid, or it will prove destructive to the plant as well as the parasite. This limit I have established practically by experiments made on Rose trees infested with mildew, and as the Rose mildew is with difficulty destroyed by common sulphur, except by repeated applications, this preparation (to which I have given the name of sulphozone, for reasons given above), may be considered to be of the maximum strength, and four or five times stronger and more potent than sublimed sulphur. In substituting it, therefore, for sulphur, a great saving will be effected in the cost of sulphur, its carriage, and the time and labour of applying it. There will, moreover, be the additional advantage of not loading the foliage with a large quantity of sulphur powder, which must in some measure impair its health by its mere mechanical presence, and in the case of Hops, the brewers will have less ground for objecting to the quality of the produce. Sulphozone, being a fine dry powder like sulphur, may be applied in a similar manner, and with the same apparatus, care being taken to use a much smaller quantity—*i.e.*, about a quarter of that of sulphur.

For medical, veterinary, and sanitary purposes, a very strong sulphozone has been prepared to take the place of sulphur in the official preparation, and for use as a disinfecting powder. This substance is exceedingly destructive to organic life, and is not adapted for horticultural purposes except for dressing the stems and branches of deciduous trees in the winter, and for destroy-

ing insects where it can exert no deleterious influence on surrounding vegetation, or for disinfecting and deodorising manure-heaps, &c., for which purpose it is better adapted than any other disinfecting powder, as the sulphurous acid fixes the ammonia—the most valuable constituent of manure—and makes it available for gardening and farming purposes, while chlorine and other disinfectants destroy it, and reduce the value of the manure in proportion to the extent of their action in deodorising it.

On the conclusion of Mr. Roberts' paper, Dr. Denny said he would like to see carbolic acid tried for the purposes mentioned. Mr. Murray thought mildew was a consequence of the death of the plant, and not the cause of the death.

Professor Dyer remarked that chemists doubted the possibility of sublimed sulphur undergoing oxidation at ordinary temperatures, and he agreed with Mr. Roberts in attributing the utility of sulphur to the presence of sulphurous acid.

THE RELATIVE INFLUENCE OF PARENTAGE IN FLOWERING PLANTS.

By J. DENNY, M.D.

ONE of the chief objects of my paper is to urge the study of a subject full of scientific interest, and of the greatest importance to the practical horticulturist, but which for the want of the accumulation of data derived from accurate experiments, at the present is involved in much obscurity.

If we could by the observation of results acquired through the medium of a series of carefully performed experiments in artificial fertilisation, obtain any reliable evidence indicative of the relative influence the male (or pollen) and the female (or seed) parents bear in the production of their progeny, it would assist us immensely in carrying out our own designs for the improvement in the form and colour of our flowers, and the quality of our fruits and vegetables.

If, for instance, we knew that either parent, and which, was prepotent in conveying to its offspring certain qualities, say of flavour and aroma, or of size and form, or of quality as regards the texture of our fruits; of colour, perfume, form, substance, and the various qualities we may wish to perpetuate or modify in our flowers, we should be able to form some proximate idea, *a priori*, of the result that would follow our fertilisations.

A knowledge, too, of the ancestry of the varieties we purpose employing would also be desirable, to enable us to make allowances for the modifications likely to ensue from the tendency to reversion towards an ancestral type—a propensity which seems to be inherent in all plants that have been much changed from their original state by artificial breeding.

It would also be a matter of scientific interest, as well as of practical importance, perhaps, to know if the proportionate influence borne by the respective parents in crossing varieties is the same as in crossing species?

Whether, as the admission of fecundation is no test of the plants employed belonging to the same species, we have any well-defined line of demarcation or practical test by which we can distinguish between species and varieties, so that we may know when to employ correctly the term hybridisation, and when cross-breeding?

Whether there exists any real difference in the powers or quality of the pollen of the long and short stamens from which we may expect to derive any specific effect on the progeny by the exclusive employment of the one or the other, or to succeed more readily in effecting difficult crosses?

Whether certain states of the atmosphere, and, if so, what apparent conditions of it, favour fecundation?

Whether any clue can be obtained, or suggestions offered, to account for the antipathies that are found to exist between apparent varieties, as well as affinities between what are considered by botanists to be distinct species, precluding fertilisation in the former, and rendering it easy in the latter?

These are a few of the most important points that are constantly occurring to the practical horticulturist. To how many of them does our knowledge admit of a satisfactory reply being given?

There are, doubtless, many present whose vast practical experience in the artificial fertilisation of our fruits, flowers, and shrubs would enable them to give most valuable information upon most of these points; and as the purport of this meeting, I take it, is intended to be for the genial discussion and for the interchange of knowledge and ideas, I trust to the generosity of those who are able to assist me in making the subject I have ventured to broach interesting by throwing more general light upon it than my circumscribed experience will afford.

From early youth I have taken much interest in artificial fertilisation, but kept no registered account of my crosses, or their results, until the controversy arose respecting the tricolored Pelargoniums, as to whether their leaf-markings could be reproduced by fertilisation and seed, or whether they were sports only, and owing to a diseased condition of the plant.

To ascertain for my own satisfaction the correct theory upon these points, as well as with the object of obtaining, if possible,

some information regarding the relative powers the respective parents exert over their progeny, I commenced a series of experiments upon the scarlet section of the Pelargonium, employing varieties of the most opposite and varied character, and crossing them in every conceivable way.

I conducted these experiments, too, with the utmost possible care and minuteness of detail, both as regards the methods I adopted for preventing self or insect fertilisation, for ensuring the fertilisation being effected by the desired pollen only; and as regards the keeping an exact register of every cross, as well as a record of the results.

By this means I soon arrived at a satisfactory conclusion as regards the points at issue respecting the transmission of variegation of the foliage by fertilisation, from the fact of its being manifested to a greater or less degree in as large a proportion as from 50 to 60 per cent. of the offspring, where the green Zonal had been fertilised by the pollen of the variegated; I also obtained some valuable information indicative of the powers the respective parents exert upon various other points in connection with the transmission and modification of the foliage and habit of the plant, as well as of the colour and form of the flower.

From the information thus derived, I am of opinion that by careful and persistent fertilisation, under the guidance of the observation of results, it is possible to produce almost any modification in the character and habit of our plants, and variety of colour and form in our flowers we might desire; for I am satisfied that by these means we possess a much greater power of moulding our flowers in accordance with preconceived design than is generally supposed; and, moreover, I think it possible that ultimately some insight may be obtained into the working of the laws that govern procreation in the vegetable kingdom, and that produce variation in our fruits and flowers.

The result of my experience derived from these experiments, as regards the relative influence of the parents, certainly tends in the reverse direction to my previous ideas, which were derived from books, from which I gleaned that the form of the flower and constitution and habit of the plant were inherited from its mother, whilst the colour of the flower only was supposed to be conveyed by the father. The recorded results of my crossings indicate an immense preponderance of influence over the progeny on the part of the father, in all respects—in colour and in form, in the quality, in size, and substance of the flower, as well as in the production of variegation of the foliage, and in the habit and constitution of the plant also, provided the plants employed are of equal strength.

I wish to be distinct upon this point of relative strength of the parents, because it seems to me that upon the equality or the preponderance of strength on either side very much hinges, as regards the results we obtain from our crossings, for power of constitution exerts most unmistakable influence, and where it preponderates on the part of the seed parent it will modify the otherwise prepotent influence of the pollen parent. This modifying influence manifests itself most as regards the habit and foliage of the plant, and next as regards the form and substance of the flower, and lastly as regards the production of a blend in the colour of the flower.

To instance what I mean (I am alluding to the Pelargonium), if the pollen of a flower of brilliant and decided colour, but of bad form and substance, belonging to a plant of weakly constitution, be applied to the stigma of a finely formed thick-petalled flower of a plant possessing a vigorous constitution, some few of their progeny will be influenced towards improvement in the form and substance of the flowers and habit of plant, with, perhaps, some blend in the colour, showing that the preponderance of vigour in the seed parent had exerted a certain amount of influence; but even under these circumstances much the greater proportion of the progeny would either resemble the father in all respects, or show reversion towards former progenitors, or an original type.

I will quote a case or two in point from my note-book. During the summer of 1869 I raised about 140 seedlings from crossings between Lord Derby and Leonidas. In about half of these Lord Derby was the pollen, and Leonidas the seed parent; and half resulted from crosses effected the reverse way. The flower of Lord Derby possessed the fine qualities, both as regards form of petal and smoothness of texture, but was wanting in depth and brilliancy of colour, and in substance also; and the plant was deficient in vigour of constitution as compared with Leonidas.

The flower of Leonidas was much inferior as regards form and quality, but of greater substance and brilliancy of colour, as well as larger than Lord Derby; and the plant possessed a vigorous constitution.

These seedlings flowered during the spring and summer of 1870 of that portion in which Lord Derby was used as pollen parent, and Leonidas as seed parent, about one-third resembled in all respects their father, a few produced flowers very considerably in advance of Lord Derby in size, substance, and in colour of the flower, and with a superior constitution and habit of plant, showing the influence of the mother in combination with the

father's. (I would instance Sir Charles Napier as an example, and which resulted from this cross). Of the remaining two-thirds, a few very nearly resembled in flower Leonidas except being paler in colour and having a somewhat increased breadth of petal, resulting from the father's influence (for instance, Iago); but a large proportion were inferior, showing reversion towards an ancestral type.

Of that portion in which Leonidas was used as pollen, and Lord Derby as seed parent, nearly half resembled in all respects their father, and the rest were much inferior; not one showed that any appreciable amount of influence had been exerted by the mother towards improvement. It will be observed that in this cross the pollen parent possessed both the inferior flower and the most powerful constitution also. As regards the habit of these seedlings, they were all more robust than their mother's.

The same season I raised about sixty seedlings from a cross between Celestial and Lord Derby. Celestial, which was used as pollen parent, possessed a brilliant magenta-coloured flower, but of very bad form and substance, and possessed a weakly constitution; from this batch of seedlings a few produced flowers of a colour very similar to their father's, but somewhat less brilliant, and with a great improvement as regards the form, quality, size, and substance of the flower, accompanied, too, with a fair habit and constitution of plant, showing a marked influence on the part of the mother, which in this cross was decidedly the stronger of the two parents. *Ianthe* resulted from this cross. The remainder of this batch were mostly of very bad form and quality of flower, and weakly constitutions; but there were some very brilliant and novel colours, interesting examples of colour blending, amongst them were carmine, rose-crimson, pinks, and vivid scarlets—some in all respects resembled Celestial.

My large seedling *Nosegay Wellington* was the result of a cross between *Le Grand* (*Nosegay*) and *Leonidas*, *Le Grand* being used as pollen parent. Here the plants were about equally vigorous. *Wellington* resembles in the character of its flower its father, but with an increased breadth of petal derived from its mother; the colour of the flower is nearly that of the father's also, but it is somewhat a blend, the purple hue of *Le Grand* and the deep scarlet of *Leonidas* having produced a very dark crimson scarlet, almost maroon. The foliage, too, of *Wellington* is most distinctly of the *Nosegay* type; its habit still more vigorous than either parent.

In breeding for variegates, and using the variegates (which, as a rule, are wanting in vigour) as pollen parents, and the robust green Zonals as seed parents, about half the number of their progeny showed variegation, and possessed weakly constitutions, the remainder being green Zonals; upon the order of procedure being reversed, by which the pollen parent became the parent of very much the greater vigour, the mother's influence was almost *nil*.

I believe that it is owing to the existence of a difference in the vigour of the respective parents that the production of novelties and varieties in our flowers (and probably in our fruits too) mainly depends, and that were it not for a preponderance of power on the mother's side, the progeny would almost invariably resemble the father; and hence the immutability of our flowers and vegetables, which are annually reproduced from seed, the result of self-fertilisation.

But I consider another source of the production of novelties and variation exists in the tendency in all flowers (and fruits) that have been artificially bred up to a state far in advance of their original condition, to revert towards former progenitors (especially under the influence of self-fertilisation), by which means new combinations of ancestral properties are formed, and hence new varieties.

Even under artificial fertilisation I find in the Pelargonium this tendency to reversion to exert very considerable modifying influences. Especially have I observed it as regards the colour of the flower; for instance, the magenta shades that have been produced upon the scarlet Pelargoniums have resulted from the crossing of pinks upon scarlets; and very many of my seedlings, the offspring resulting from the crossing of two magenta-coloured flowers, have produced pink ones as well as scarlets, showing reversion to both the colours of their immediate ancestors.

It is a point worthy of observation whether the colour of a flower, or a change in the character of a plant that has been recently obtained, are conveyed to their offspring in the same proportion as to numbers, and with the same certainty as those of long standing. I think not.

I must also mention a remarkable instance of reversion as regards foliage that has occurred in two of a number of seedlings raised this spring from *Violet Hill Nosegay* as seed parent, crossed by *Ianthe*, with the object of obtaining variety in the flower. Two of this batch of seedlings have come variegates. Now *Violet Hill* was bred for variegation, and was planted out at Messrs. Henderson's establishment at St. John's Wood in the spring of 1864, with a view to its breaking into variegation, but which it did not do, but was selected, and subsequently sent out, for its flower, and on account of its dwarf habit of growth.

My notes would furnish innumerable examples in support of

the theories I have founded upon them, did time admit of my going further into detail. I would observe that I have purposely quoted the results of crossings which produced varieties that have been sent out by Mr. W. Paul, that they might, if desired, be referred to, and compared with their parents.

A close analogy seems to me to exist between the vegetable and the animal kingdoms as regards the ill effects produced by breeding in-and-in, and the good resulting from crossing opposites, for I find it to be necessary for the maintenance of improvement in the flower and the constitution of my seedlings, to introduce fresh varieties to breed from annually; and I find that crossing two flowers of the finest qualities does not produce such satisfactory results as where one of much inferior quality is employed. Of course it will be inferred from my previous observations that I use the superior-quality flower as pollen parent.

I am of opinion that the decadence in many of our old florists' flowers is owing to their having been bred in-and-in, and from the repeated crossing of flowers of a precisely similar strain and qualities, with the object (and probably supposed only means) of reproducing flowers possessing certain peculiarities in markings, or form, in accordance with the rigid rules prescribed for these flowers.

As regards the condition of the atmosphere that favours the effecting of difficult crosses, it would be no easy matter to note with any degree of certainty the precise period of each successful attempt, nor the precise condition of the atmosphere at the time; we read of special crosses having been effected under certain conditions of it, but I have never seen it specified what these conditions were. My experience indicates that bright clear weather, and the hours of sunshine, are conducive to fecundation.

I have alluded to the antipathies and affinities we find to exist, without any explicable cause; for instance, I have found it impossible to fertilise three or four varieties of the scarlet *Pelargonium*—viz., the Duke of Cornwall, Dr. Muret, Beauté de Suresnes, and all that section of the doubles which sprang from Beauté de Suresnes, which to all appearance are mere varieties of the Zonal section, save with one another; and, showing the existence of affinity between what are supposed to be distinct species, I have fertilised without much difficulty a variety (*pelatum elegans*) of the Ivy-leaved section by the pollen of the Zonal.

I have also alluded to the possible difference in the respective influence of the parents in true hybridisation. Upon this point I have not sufficient evidence to form a fair opinion; but certainly in the seedlings I have raised between the Ivy-leaved and the Zonal sections, their foliage (with the exception of some distinctive evidence of their being hybrids) resembles almost entirely that of their mother, which you will observe is the reverse of my experience of the results produced between varieties.

Much has been written and said upon the difference in the quality and powers of the pollen of the short stamens; and if the supposed difference really does exist, it is a matter of considerable practical importance, and one worthy of further scientific investigation; but my experiments have hitherto failed to satisfy me of their possessing any difference.

In an admirable article upon hybridisation, written by Isaac Anderson-Henry, Esq. (and which at different periods has appeared in nearly all the horticultural journals), he says, "that, owing to the granules of the short stamens being smaller than those of the long ones, they can the more easily descend the tubules leading from the stigma to the ovaries, and consequently facilitate the crossing of a large-flowered variety, or species, upon a smaller one."

I have not been able to detect this difference in size, although I have many times placed the granules of the long and short stamens side by side under a powerful microscope; nor, I believe, is it the opinion of physiologists of the present day that they do descend these tubules at all—in fact it has been shown that they send down filaments through them to the ovules.

The arrangement of the anthers upon filaments of different lengths looks to me like a provision to ensure all parts of the body and legs of the insect coming into contact with the pollen as it passes down the flower to obtain the nectar, thereby rendering the fertilisation of the next flower it visits the more certain.

The visible effects of impregnation are frequently manifested with a rapidity almost equaling that of an electrical phenomenon. I have observed the petals of the *Pelargonium* which, before impregnation, were quite firm, to fall within a few seconds of the application of the pollen to the stigma—a result due, I conclude, either to the immediate diversion of nourishment from the then superfluous part of the flower to the organs of generation, or to the existence in the vegetable kingdom of a power analogous to the nervous in the animal, but of which we are as yet in total ignorance.

Lastly, I would remark that, to enable reliable conclusions to be drawn upon any of these points, we require an accumulation of data derived from the careful observation of very many un-

biased workers, whose results have been obtained from experiments conducted with scientific precision upon all our flowers and fruits.

Such an accumulation of recorded facts, if they could be obtained, would prove a source of the greatest interest to the philosopher, by their tendency to throw some light upon the working of Nature's laws, and could not but afford most valuable information for the guidance of the practical horticulturist; and moreover, by freeing horticulture from all empiricism, place it in its true and legitimate position among the modern sciences.

GRAFTING.—No. 9.

Grafting in a Single Cleft.—We have here a stock (fig. 1, A) of medium size, which we cut obliquely at B, the top, C, of

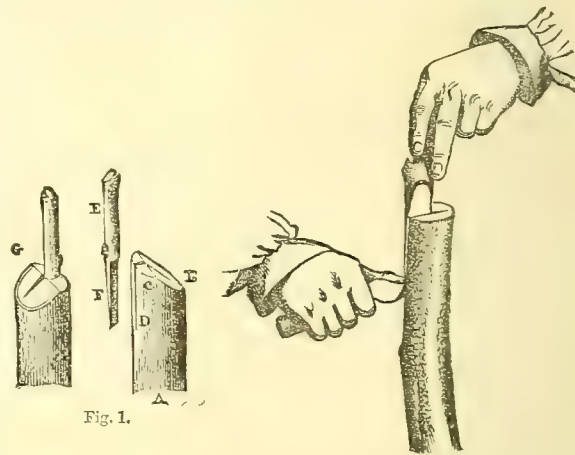


Fig. 1.

Fig. 2.

the cut being smoothed horizontally; then with the point of the knife make a vertical split, D, to correspond in length with the cut on the scion, and in such a manner that it will not extend to the opposite side of the stock. When the cleft is made with the instrument in one hand, take the scion E in the other, and there insert it by the upper opening, pushing it down according as the cleft opens (fig. 2), and withdrawing the knife as soon as the scion has attained its proper position. The cut of the scion E, when inserted at C, must have its bark coinciding with that of the stock, without any unevenness. If the stem has a thick bark the scion is to be slightly inclined in the cleft, the top being a little inwards and the base outwards, so as to secure some point of contact between the liber and albumen of the two parts, for the union is formed by these, and not by the external layers of the bark.

Grafting in a Double Cleft.—The stock (A, fig. 3) being larger will receive two grafts. The cut B is horizontal, and



Fig. 3.

we cut the stock diagonally at C either by pressing down the knife with both hands perpendicularly, or, if the wood is too hard, striking it with a small mallet. The grafts are placed one by one in the mouth, or in a vessel containing fresh moss. When the cleft is two-thirds made, draw out the knife on one side, so that the cleft shall be kept open, place a scion, D, at the other side, and using the blade of the knife as a lever, the scion will be easily inserted in its place. The insertion of the other scion is not more difficult; perhaps it may be again necessary to place the blade of the knife in the centre of the cleft C, in order to force it open a little, so as the more easily to admit the second scion. If there is any danger of breaking the knife by using it in this way, a small boxwood wedge may be put into the centre of the cleft instead. The two scions can then be put in without making the cleft larger. Tying and the application of grafting-wax are likewise necessary.—BALTET, *L'Art de Greffer*.

OPIMUM.—The cultivation of the Poppy in France is steadily increasing, and it now occupies about 50,000 acres, of the value of 4,500,000 francs, yielding opium to the value of 2,000,000

frances per year. Different samples of opium raised in various parts in Europe yield from 8 to 13 per cent. of morphine.—(*English Mechanic and World of Science.*)

NOTES AND GLEANINGS.

It affords us much pleasure to announce that the Council of the ROYAL HORTICULTURAL SOCIETY, in consideration of the services rendered by Mr. BADGER in connection with the Birmingham Show, have elected him a forty-guinea life Fellow of the Society. A more graceful and better-earned compliment was never paid. We have ourselves been eye-witnesses of the vast energy and indomitable labour which Mr. Badger has devoted to render the Birmingham meeting a success, and he succeeded in doing so. Such disinterested devotion is well worthy of all honour, and we only hope that Mr. Badger may now have an opportunity of recruiting the energy which he expended so liberally during the whole progress of the Exhibition.

— We observe, by a circular we have received, that Mr. KETTLEWELL has opened at 22, King Street, Covent Garden, HORTICULTURAL AUCTION AND SUBSCRIPTION ROOMS, the object of the latter being "to enable members to meet their friends and brother horticulturists to discuss matters appertaining to their favourite pursuit, and to encourage sociability among those connected with the craft, as well as a more extended love of flowers by enabling a comparison to be made of their various productions." In addition to this there will be a register for gardeners, a plant exchange, and a room set apart for horticultural implements and new inventions.

— At the Royal Counties (Hants and Berks) Agricultural Society's Show held in the Home Park, Windsor, Her Majesty, on arriving at Messrs. Suttons' ornamental stand, attracted by the striking display, ordered the carriage to halt, and Mr. Martin Sutton had the honour of explaining the various objects of interest in their collection, including the new early Pea, grown at the Royal Gardens, called Suttons' First of All, some specimens of their new Cucumber the Marquis of Lorne, and the beautiful Grasses from their experimental farm at Reading. Her Majesty, after spending some time in inspecting this interesting collection, was graciously pleased to accept a presentation copy of "Suttons' Amateurs' Guide."

ROYAL BOTANIC SOCIETY'S SHOW.

JULY 10TH AND 11TH.

THE last Show, for the season, of this Society commenced on Wednesday; that it is some improvement on the last one we are glad to find, but at the same time that it is not equal to the Regent's Park July shows of former years we are sorry to say. Of fine-foliaged plants, Ferns, and Palms, there are fine specimens from Messrs. Williams, Ward, Burley, of Bayswater, and Lee, of Hammersmith. Of stove and greenhouse plants, the best groups come from Mr. Ward, gardener to F. G. Wilkins, Esq., who, among others, has very fine specimens of *Dipladenia amabilis* and an *Erica Parmentieriana rosea* a fine mass of rosy-blossom. Mr. J. Wheeler is second. For a group of twenty Mr. Ward is also first with very well grown plants; and for groups arranged for effect "for the decoration of a small conservatory," Messrs. Lee, of Hammersmith, are first with one of the prettiest groups we have seen, and Mr. Bester, Pine Apple Place Nursery, second. Mr. Morse, nurseryman, Epsom, sends a good group of six stove and greenhouse plants in flower; Mr. Williams, Orchids in fine bloom for this season of the year; Messrs. Jackman several very fine specimens of Clematises, especially *Rubella* and *Alexandra*; and Mr. Parker, Tooting, fine-foliaged herbaceous plants, hardy perennials in flower, and a general collection. Ferns, Exotic and British, are well represented in collections from Messrs. Williams, Ward, Ivery, and James; while of *Tricolor Pelargoniums* there are very good collections of twelve and six from Mr. Stevens, Pestridge, Wright, Little, and Welch. Mr. Ware has a choice collection of Alpine plants; Mr. Puttick, Acton, admirably-grown Balsams; and of new plants, Messrs. Veitch, Mr. Williams, and Mr. Parker, each show tolerably large groups. Messrs. E. G. Henderson send a very neatly arranged group of bedding plants; Messrs. Downie & Co. a very finely marked *Brunze Pelargonium*, called W. E. Gumbleton; and Messrs. Dick Radclyffe & Co., rustic baskets, window cases, &c. R. Webb, Esq., of Calcot, has the finest boxes of *Maréchal Niel* Rose we have seen this year; and Messrs. Cant, Paul & Son, and other well-known exhibitors have fine stands of various kinds. From Mr. Turner, of Slough, come some fine blooms of Carnations and Picotees. Of dinner-table and other floral decorations there is a fair display, and we noticed several very tasteful arrangements.

Of fruit there is a better show than last time, but only two collections—from Mr. Johnson, gardener to the Marquis of Ailesbury, Savernake, and from Mr. Lynn, gardener to Lord Boston. Hedsor. Mr. Ward, gardener to T. N. Miller, Esq., and Mr. Walker, Gunnersbury House Gardens, send excellent baskets of black Grapes, fine in berry and bloom. Mr. Walker is also first for good symmetrical bunches of Black Hamburg Grapes; Mr. Cole, gardener to J. Budgett, Esq., Ealing Park, for small but exceedingly well-ripened Buckland Sweetwater. Peaches, Nectarines, and Cherries are good but few, and we noticed a good dish of *Passiflora laurifolia* from Mr. Carr. There is a good show of Pines, all well grown. Mr. Bland, gardener to G. Whitehouse, Esq., Newport, Monmouth, is first, and Mr. Hepper, gardener to C. Ledward, Esq., Acton, second, for good Queens.

THE WEST OF ENGLAND ROSE SHOW.

THIS Show has just been held at Hereford. Considering the badness of the season for Roses, the display at the Shire Hall on Tuesday last, 9th inst., was a remarkably fine one. The leading prizes in Class A, nurserymen, open to the United Kingdom, were awarded as under: Four firsts to Mr. J. Keynes, Salisbury; three seconds to Mr. B. R. Cant, Colchester; three thirds to Messrs. Paul & Son, Cheshunt; three fourths to Mr. John Cranston, Hereford; and one third to Mr. W. Saunders, Abergeenny. In the open classes Messrs. Paul & Son won two firsts, Mr. Keynes two firsts and three seconds, and Mr. Cant one first, two seconds, and one third. The principal amateur prizes in the classes open to the United Kingdom were distributed as under: Mr. T. Laxton one first, one second, and one third; Rev. J. B. M. Camm, Monkton Wyde Vicarage, Dorset, two firsts; Mr. R. Baker, Heavitree, Exeter, one first, one second, and one third; Rev. C. Evans, Solihull, near Birmingham, one first, one third, and two fourths; Rev. G. Arkwright, Pencomb Rectory, Hereford, one second; Mr. J. H. Arkwright, Hampton Court, Leicester, one second.

Mr. Keynes's Roses were remarkably fine. They were large, symmetrical, delicate in colour, and perfect in shape. In the whole of his boxes there was scarcely a defective bloom to be found. Mr. Cant's Roses were also good. Messrs. Paul & Son's included some fine blooms, but this firm has evidently suffered from the ungenial weather which has been so detrimental to Roses generally. Among Messrs. Paul & Son's Roses were some new ones which deserve a special mention. S. Reynolds Hole (Paul and Son), a rich dark crimson Rose, said to be a seedling from Duke of Edinburgh; Cheshunt Hybrid (Tea), a bright crimson, large, well-filled, thick-petalled variety, apparently a decided acquisition, and quite a novelty among Teas; and W. Wilson Saunders (Hybrid Perpetual), a large, regularly imbricated Rose, of bright glowing crimson colour, stout in substance, and vigorous.

It is needless to give lists of Roses shown well at Hereford; it would be simply to repeat the lists of those mentioned in recent numbers in connection with the Birmingham and South Kensington Exhibitions.

TREES ON THE THAMES EMBANKMENT.—At the meeting of the Metropolitan Board of Works, June 21st, a question was finally settled, to the entire satisfaction of everybody, except, perhaps, the single member who formed his own minority of one in the division which he challenged; and although the subject matter of the controversy is trifling enough, yet it has bred so much bad blood and given occasion to so many groundless imputations, that we are glad to find the facts, now formally ascertained, put on record and made public. When it was resolved to plant a row of trees along each side of the Thames Embankment, the contracts for supplying the plants were given to Mr. Anthony Waterer, Mr. John Waterer, and Mr. Meston, three well-known nurserymen of high character, and the process of planting them was subject to the supervision of Mr. McKenzie, an officer of the Board. The experiment has been successful. But before it had been fairly tested imputations began to be freely made as to the conduct of Mr. McKenzie and his assistants, and the charges of the nurserymen. It is regrettable that the recklessness of those who made such charges against persons having no opportunity of defence—conduct the more reprehensible because indulged in by those entrusted with public and representative functions—should have been allowed so long to assail the character and impeach the integrity of men whom inquiry has shown to have been entirely free from blame. The Metropolitan Board felt bound to investigate the matter, if it were only for the sake of the reputation of those so wantonly attacked. The accounts of the nurserymen were referred for examination to a sub-committee of the Works and General Purposes Committee, and these gentlemen, feeling that

the accusation of over-charges brought against the Messrs. Waterer and Meston was one to be dealt with only by an expert, placed the matter in the hands of Mr. Gibson. After a careful scrutiny of the accounts, and an examination of the circumstances of the supply of plants, Mr. Gibson reported that the charges of the nurserymen were fair and reasonable, and that there was no ground for the allegations of exaction. This, which, of course, disposes of the mythical

"job" so much talked of—ought to have settled the question. But the member of the Board who had been most assiduous in insisting upon the exorbitant charges of the nurserymen, persevered in dividing the Board upon the question, remaining, as we have said, in a minority of one, and seeing thirty of his colleagues voting against him, and endorsing the report of the Committee recommending the payment of the accounts.—(*The Metropolitan*.)

WIGANDIA URENS.

THE plant which is faithfully portrayed in the accompanying illustration is a native of Peru, where it is to be found growing amongst rocky places on bare and somewhat barren ground,

usually attaining a height of about 4 feet. As will be seen, it is of noble port; and this, in conjunction with the robust constitution of the plant, has led to it, as well as several others of the genus, being pressed into the gardener's service for the summer-decoration of the pleasure ground.

Wigandia belongs to the order Hydroleaceæ, and contains but few species; all of them are deserving of the attention of the amateur and gardener for their distinct and effective character, and the present plant is by no means the least amongst the several grand species.

Wigandia urens is characterised by its peculiar stinging properties, and hence is not a favourite with some, neither can I recommend it as being the finest of its genus, although it is very distinct, and may be used in various parts of the pleasure grounds to avoid a sameness of effect, which is apt to be felt when any one species, however beautiful, is too often repeated. The leaves are large and very rough, somewhat ovate-cordate in shape, with a slightly pointed apex, and having both surfaces clothed with long dense hairs.

Wigandias are rapid-growing plants, and are easily propagated by seeds, from cuttings of the lateral shoots, or from

pieces of the roots. The laterals make the best plants, and they should be struck early in the season. When the cuttings are rooted place them in separate pots, and set them in such

a position that they will be fully exposed to sun and light, in order to produce compact, short-jointed growth. Amateurs who have no convenience for housing the old plants through the winter can get up their stock well and early, by sowing a pinch of seed and placing it in gentle bottom heat. After germination, when the plants have become large enough to handle conveniently, pot them separately, and treat them in a similar manner to cuttings. If all go well they will be fit for planting in the open air by the middle of May, which will be sufficiently early for them to be exposed to the vicissitudes of our climate. The planter must suit his own taste with these plants, but they can scarcely be badly placed, for any of them will form noble ornaments either in isolated groups upon the lawn, or as centres to large beds, and also as single specimens.

The soil in which Wigandias thrive best is a mixture of two parts loam to one of peat, with a small portion of river sand.

When they are planted out the ordinary soil should be removed and a mixture of the above compost put in its place, but add to it some thoroughly decomposed manure.—*EXPERTO CREDE.*



Wigandia urens.

HARDINESS OF AQUILEGIA GLANDULOSA.

I did not know that there was any doubt as to the hardiness of this most beautiful and interesting herbaceous plant till I saw the remarks of "A. R." (June 20th), doubting the possibility of its being grown in the south of England, and the replies of "W. B. H." and Messrs. Carter, Dunnett, & Beale giving their experience in its favour. My own experience with it is somewhat limited I must confess, but in the short time I have had it I have seen no signs of tenderness or miffiness

about it. It may be that some strains of it are more tender than others. I think I have read somewhere that there is more than one strain of it. My strain is that of Mr. Gregor, of Forres, N.B. I had my packet of seed direct from him in the summer of 1870. I sowed it at once on a small border in the frame ground on which I sow and raise all sorts of hardy plants; in consequence of the hot weather just then the seeds did not vegetate until late in the season (I had given it up

altogether), and the seedlings only made one or two leaves. They looked so exceedingly small that I thought it was all up with them, and I said to myself, "Good-bye, *Aquilegia glandulosa*;" for the frost coming and catching them in their most sensitive state, I felt certain that I should never see them again; but, to my joy, in the spring of 1871 they came up very strongly, considering their small state the year before. I do not remember now what was the reason why I did not move them out of their seed-bed. I know they remained there all that year, but as soon as they made their appearance this spring I shifted them in patches into the herbaceous border (not many of these borders to be seen now-a-days, more's the pity), and I have had some very beautiful blooms—blooms which have been the admiration of all who have seen them.

The plant, by reason of the inordinate mania for *Geraniums* and other bedders, which has driven out so many valuable and beautiful plants, was quite a stranger to many of my neigh-

bour gardeners; they thought it was some novelty I had picked-up, and, of course, they asked that common question, "Will it bed?" Of course it will not bed; I am quite as well satisfied that it will not, but as it has stood here in the valley of the Trent, east of Nottingham, the last two winters under the conditions I have detailed, I think there must be something wrong if "*A. R.*" cannot grow it in the south of England.

Let me, before I close this note, beg you to accept my best thanks for publishing, and Mr. Abbey for writing, that admirable paper on "*The Best Gardeners' Union*," which so fittingly heads the *Journal* of June 27th; it contains words of wisdom which every workman, and specially every gardener, ought to read, mark, learn, and inwardly digest. Thoughts like those have long been simmering in my own mind, but want of ability has prevented my giving expression to them. I would that every gardener could be induced to act up to them at once. I am proud that there are members of our profession who think and speak such sound common sense.—P. H. N.

SUMMER-HOUSE IN AVENUE DE GRAVELLE, BOIS DE VINCENNES.



(From M. Alphand's "*Promenades de Paris*.")

GREENHOUSE PLANTS.—No. 11.

TROPEOLUMS.—A genus of very fine-flowering climbing plants, which are very effective on trellises or pillars in the greenhouse or conservatory. Those of which I shall treat are bulbous and herbaceous plants, the stems dying off after flowering.

The most suitable compost is a mixture of equal parts of light turfy loam, leaf soil, and sandy peat, chopped up rather finely but not sifted, and half that quantity of charcoal in lumps from the size of a pea to that of a hazel nut, the same of silver sand, and a like quantity of very rotten manure. Good drainage to about one-fourth the depth of the pot is very desirable, and on the drainage place about an inch of the most fibrous parts of the peat, shaking the finer particles out, and using the rough only. Fill to within an inch of the rim of the pot, and in the centre place a bulb, which, to make a good growth and to bloom well, ought not to be of less size than 1 inch in diameter, and for this an 8-inch pot is sufficient. I have sometimes employed 9-inch pots for very strong roots, but for the generality of flowering bulbs the less size will be found more suitable. I have sometimes put three or five bulbs in a 9-inch pot, and when the roots are not large, and a tolerably

large trellis has to be covered, this plan answers well. Whatever the number of bulbs placed in a pot, or whatever the size of pot employed, I consider that when set the bulbs should have their crowns just an inch below the rim of the pot, and the soil, being just moist, should be pressed rather firmly but not made hard; an indentation large enough to receive the bulb should be made, and the bulb placed with its growing side upwards, resting on and surrounded with silver sand. The pot should then be filled to the rim, the soil pressed gently down, and the pots set in a light airy position in a cool house. It is not unusual to set the pots in out-of-the-way places and corners, in which they are allowed to remain until the shoots are several inches long, so that these become weak and spindly. Instead of that they should have abundance of light and air from the commencement of growth, and cannot have too much of either in any stage.

The time for potting the bulbs is entirely dependant on the growth. If left to mature the growth in the house, the bulbs should be taken out of the soil when the stem is quite dead, and placed on dry sand, in a box, in a cool dry place. When

the time comes round they will commence growth, and when the shoots are an inch long, or less, the plants should be potted. Put in all the roots when any commence growing, as we may be pretty sure the time has arrived for their growth, and then the sooner they are placed in a suitable medium the better. The bulbs rest two to three months.

Before proceeding I ought to say something on the earthing-up system of culture. Those who wish to practise this system have only to place the tubers 4 inches below the rims of the pots; as the young shoots grow, layer them in the soil, and cover with fresh mould, leaving the shoot-ends about an inch above the surface. In this way the shoots may be layered and fresh soil added as they grow until the pot is filled to the rim, and then they may be allowed to grow on the trellis or other support. This plan is good when increase is wanted, as at many of the joints, and especially the bends of the shoots, bulbs will form. I think, however, the growth is weakened by this layering process, and that we have the strongest growth and best flowering plants by the former method.

A soddened soil is destructive to these plants. If it ever gets into that state the plants rarely do any good the season it occurs—hence the necessity for very careful watering, and especially in the early stages of their growth. The soil, however, should be kept moist, not giving any water until it becomes dry, and then afford a thorough supply. If this be attended to, and the plants be not allowed to suffer from want of water, they will grow well. After they are in good leaf-growth more copious supplies of water will be required, especially after the flowers show, when the supplies should be liberal. After flowering the supplies of water should be lessened, and when the leaves turn yellow leave off altogether; when the stems wither take up the roots as before stated.

Tropæolum succeed in a greenhouse with a temperature of 40° to 45° from fire heat. The stems need training to trellises, which may be of any shape, but not larger than will be covered well. Flat and balloon-shaped trellises answer very well for plants in pots, but the top of a Larch or Spruce, leafless of course, answers well; in fact, I consider such very pretty, and finer than any form of trellis whatever. The main point is to cover every part of the trellis, especially with the flowering portions of the shoots, having them in good foliage and flower throughout. To effect this, frequent regulations of the shoots will need to be made, and the plants must be turned frequently round to secure equal growth on all sides. If the flowers are all wanted on one side, as they will be on a flat trellis; then that side must be kept constantly to the strongest light.

The kinds most deserving of greenhouse culture are—

Tropæolum tricolorum, flowers scarlet, orange, and black.

T. tricolorum grandiflorum (Jarratti), flowers larger than tricolorum, and the plants stronger. The colour of the flowers are the same.

T. brachyceras, yellow.

T. azureum, bright blue, very handsome, and by no means common.

T. pentaphyllum, green and red.

T. polyphyllum, golden yellow; very showy.

The last two are all but, if not quite, hardy, and yet they are fine subjects for the greenhouse.—G. ABBEY.

BEDDING-OUT.

By THE REV. C. P. PEACH.

(Read before the Horticultural Congress at Birmingham.)

(Concluded from page 6.)

You will see, then, I am an advocate for those who wish to carry out the system of bedding-out to the greatest advantage, to erect suitable houses, and to take as much pains in the winter management of them as they would with plants which they grow to ornament their conservatories or stoves; and where this cannot be done, it is far better to reduce the number of plants, and to see that those which are put out are not only good sorts but good plants, rather than to plant out too many.

Now comes an important point, and that is the general management of the planting itself. First of all, let everyone have a plan of his garden on paper. Let every gardener note down from time to time during each season the habit, and growth, and colour of each of the different kinds of plants he grows, and then make up his mind as early as he can how he will plant his garden next year, so as to put in a sufficient stock of each kind required for the different beds, and avoid having

to spoil a particular combination of colouring by falling short of some plants while he is overstocked with others. Next I would warn gardeners against too great a use of primary colours, such as scarlets and yellows. Let them try and get as great a variety in different shades of colour as they can. If, for instance, in a long bank, the bank be divided into a number of beds, instead of repeating the same kind of scarlet Geranium, or pink Geranium, as the case may be, it is far better to use different kinds, so as to avoid too much repetition and to be able to compare one kind of scarlet with another, or one kind of pink or crimson with another. Use also a good deal of soft colours and neutral tints, such as *Ageratum*, *Purple King Verbena*, *Geraniums* of the *Amy Hogg*, *Violet Hill*, and *Lady Kirkland* stamp. Avoid the use of large beds as much as possible, especially large beds of primary colours; take care not to plant the centre beds of your garden with such things as *Tom Thumb Geranium* or yellow *Calceolaria*, so as to attract the eye from the outer beds; be careful about the use of white, though perhaps there is less need to warn against this, as there are so few white flowers, but it is as well not to overdo white variegation. A garden should be much like a good carpet in a room—rich and harmonious, pleasant for the eye to dwell on, not going into violent contrasts or glaring colours, or having too conspicuous a pattern; and the effect ought to be produced as much as possible by means of flowering plants, and not mere variegated or ornamental-foliaged plants, though these plants ought to be used in order to give diversity and difference of form; and some of the variegated plants, as tricolored and bicolored *Geraniums*, are especially useful in separating one primary colour from another. A garden, we ought to remember, ought not only to be beautiful but it ought to be interesting, and mixed beds of *Verbenas*, and trial beds where one kind of plant can be compared with another, will always add to the interest of a garden, and I know hardly any bed so beautiful of itself as a well-grown bed of mixed *Verbenas*.

I have said nothing as yet about the plan of the flower garden or beds themselves, but I would add a garden for bedded-out plants ought to be rather formal and of the geometrical order for the proper harmony of colouring in bedding. The beds, also, should form a good pattern of themselves, not be merely so many forms cut out of grass or laid out on gravel, but should be separated from each other by a nearly uniform breadth of walk, and none of the beds ought to be too big for the others, so as to dwarf the rest by comparison. Each bed should also be of a good shape of itself, avoiding points and angles, and unnecessary twists and curves, and avoiding all unnecessary attempts at elaborate design, so as to make the flowers the secondary point. A flower garden ought essentially to be a flower garden; not so much *Box* and gravel, not so many yards of tile and coloured paths, with statues, and vases, and grotesque figures, &c., but flowering plants should be the predominant feature.

Time warns me to conclude. I would only add, my object in making these remarks is to stand up in defence of a system which has done so much for horticulture, and to ask gardeners to help to defend it by being still more careful about the quality of plants they bed-out, and the manner in which they are grouped. I do not wish to interfere with those who prefer herbaceous borders and an attempt to grow plants in what they call a more natural rather than a formal manner; but as all dressed ground round houses must necessarily be more or less formal, as the mere fact of mowing a lawn and forming walks and beds prevents the adoption of flowers *à la naturel*, it seems to me rather hard to condemn the taste of those who prefer to see their gardens planted with *Geraniums*, *Verbenas*, *Ageratums*, *Calceolarias*, *Lobelias*, and other plants of a like nature, which have proved effective in combination, and more durable and more manageable than the old herbaceous borders. No doubt it is my want of taste, but I have never seen an herbaceous border that was in the least attractive. I can admire individual plants, but the grouping was so utterly ineffective in old days—tall plants tied-up in bundles with sticks adjoining trailing plants and dwarf alpine; plants with dead blooms running to seed mixed with others not yet come to perfection, so as never to make the border look effective at any one time.

Public taste may want educating, but I do not think that anything which has become really popular and adopted by those of refined taste as well as by the public, has ever been really meretricious, and it is on this account that I maintain it is savouring of want of courtesy to those who admire bedded-

out gardens to cry down the present system, and to condemn those who admire them as having no taste.

[In consequence of want of time the reading of this paper was not completed.]

TEA-SCENTED ROSES.

I CONSIDER the Judges acted rightly (see page 526). Both the Roses are Tea-scented. *Maréchal Niel* is placed by some nurserymen among the pure Teas, and by some among the Noisettes. *Maréchal Niel* is of the Noisette family, but it is not Noisette in character. A Noisette properly means a cluster Rose. Here it blooms mostly as a single Rose. It was derived from *Isabella Gray*, which was derived from the *Cloth of Gold*. Neither *Maréchal Niel* nor *Gloire de Dijon* is a pure Tea. I think the Tea-scented Noisettes and pure Teas may be well shown together. In giving a list of Roses I usually place *Maréchal Niel* and *Gloire de Dijon* with *Triomphe de Rennes* and *Céline Forestier*.—W. F. RADCLIFFE.

LAWN SAND.

[THE following communications are in answer to an inquiry in our Journal, published June 20th.]

LAWN sand has been tried here with the most remarkable effect; but we found it necessary to lay it on more thickly than recommended in the paper of directions sent out with the sand. We first marked out a small piece of turf, some 8 yards by 5, and covered it with sand at the rate of 2 ozs. to the square yard. This had very little effect on the Daisies and other weeds, though it had some, but the improvement in the colour of the grass was surprising at about a fortnight's end. We then tried another piece at the rate of 3 ozs. to the square yard. This decidedly checked the Daisies, &c., and again the colour of the grass was improved. Finally, the whole was covered again at the rate of nearly 4 ozs. to the square yard, and the result is most satisfactory. The part of the grass that has been thus treated is now of a fine healthy blue-green colour, with hardly a Daisy and very few other weeds to be seen, while the rest of the lawn is of a sickly yellow colour, and a perfect mass of weeds of all kinds. The line of demarcation shows as clearly as if it had been stencilled, and has a very curious appearance. I may add that we are on limestone rock, and the land is thin and somewhat poor.—E. E. E.

I TRIED an experiment with it last year. Only wishing to give the stuff a trial, I sent for the smallest quantity that was made up; for this the charge, including carriage, was 11s. 6d. There was no direction sent with the tin as to how the "sand" was to be applied, so the Plantains, Pandelions, Daisies, &c., were dusted with it moderately thickly. I found it killed the leaves of the weeds wherever it touched them, the blades of the grass being affected in a similar manner, so that the lawn was very unsightly for several weeks; by-and-by, the grass and weeds began to recover and to grow very much more strongly than on the part of the lawn to which the "sand" was not applied, and this was another objectionable feature, as this part required cutting when the other part did not. My trial proved to my own satisfaction, first, that the sand did not eradicate the weeds, and, secondly, that it spoiled the appearance of the lawn for weeks after it was applied.—J. DOUGLAS, *The Gardens, Loxford Hall*.

I HAVE had it in use for two years. My lawn was very full of Plantains and Daisies; in the centre of each of these nuisances I placed a thimbleful of the sand, and in about five days there was only a brown patch, the weeds being entirely destroyed, nor did they come up again the next season, which I was half afraid would be the case; and the most wonderful part of it is that in a fortnight or three weeks (depending, of course, upon the weather) the brown patches above alluded to were covered with fresh and healthy grass. So far the sand is a most perfect article; but, on the other hand, I must mention a drawback—the grass grows rather coarse where the sand has been placed, and if the lawn is only mowed once a-week it shows very badly, having a similar appearance to the dark green spots so often seen in a field of young Wheat, but in places where the lawn is mowed twice or thrice a-week, as is the case here, this defect is not noticeable.—NORTH WILTS.

I MAY say it caused our lawn to assume a brown appearance for a time, but after a fortnight or so and onwards throughout

the summer it gave it the most beautiful dark green hue one could wish for, and at the same time considerably lessened the Plantain and other weeds. We used the rose of a large water-pot as a distributor, and it answered the purpose perfectly well.—X.

MARQUIS OF LORNE CUCUMBER.

I CAN recommend this to everyone. I have this season cut three (the only three of this sort), and they were respectively 20 inches, 20½ inches, and 21½ inches long, perfectly even in size from point to stem, and hardly a seed in them, the flavour also excellent. Their great fault with me, however, is that they are very late. I sowed Berkshire Challenge the same day as *Marquis of Lorne*, and the fruit of the former was fit to cut nearly three weeks before the fruit of the latter.—NORTH WILTS.

THE POET SCOTT, OF AMWELL, AND THE MEZEREON.

THIS little-regarded poet—who is really deserving of more attention than moderns can be expected to bestow upon him—in his description of the seasons contained in his "Amabean Eclogues," while commenting upon the plants noticeable in winter, says—

"Bright Mezereon spreads her clustering leaves."

And to this the annotator, in Chalmers's edition of the British poets, adds that "This beautiful little evergreen is frequent among our woods and coppices. Its smooth shining leaves are placed on the top of the stem in circular tufts or clusters. The flowers are small and of a light green. It blows very early in mild seasons and warm situations." In both instances an error is committed. The reference is clearly not to the true Mezereon but to the Spurge Laurel, which is evergreen, the Mezereon having deciduous leaves; also the Mezereon has white or pink flowers, and it is not, and has probably never been, by any means common. The bard of Olney avoided this mistake, for he describes the

"Mezereon, too,
Though leafless, well attired, and thick beset
With blushing leaves investing every spray."

Other parts, however, of Scott's Eclogues are true to nature and local scenery, as I can testify from personal observation. One line is particularly noticeable for its correctness—

"The enclosure ditch, luxuriant Mallows hide."

The profusion in which the common Mallow (*Malva sylvestris*), grows in the fields and lanes of that district of Hertfordshire has often struck myself and others. As he was not a professed botanist, however, it is questionable whether, when he says that

"Autumnal fields few pleasing plants supply,
Save where pale Eyebright grows in pastures dry,"

he is alluding to the true Eyebright (*Veronica Chamædryas*). [*Euphrasia*]. Possibly he intends the Grey Field Speedwell (*V. agrestis*).—J. R. S. C.

FUCHSIA CULTURE.

THE Fuchsia is an old and general favourite. Few plants can equal it for profusion of blooming and gracefulness of habit, whether grown in a pot or trained up a rafter or back wall of the greenhouse, where it flowers profusely, and is almost indispensable when large quantities of cut flowers are in request, as a few sprays round the outsides of the flower-glasses set them off to great advantage, breaking the stiffness of appearance, which should always be avoided as much as possible. To have fine plants we prefer taking our principal batch of cuttings about September for the largest plants, the following season choosing those shoots, if possible, that have no bloom buds, and placing them in sand and a little leaf soil under a hand-glass, in gentle heat, and shading from bright sun. In a short time all will be rooted, when each should have a small pot, using rich, free soil, having the pots well drained. Everything should be done to induce the cuttings to root at this time; if allowed to remain dormant, they get checked and stunted, and never afterwards grow freely, as they do if put in a genial hotbed.

When the first potting is over, replace them in a close, warm frame for a short time, sprinkling overhead in bright days, and shading until a start is made, after which every attention should be paid them, as the future success of plants depends greatly on being properly started. If a shelf close to

the glass is at command, where a temperature of from 55° to 60° can be maintained throughout the winter, the plants will keep growing a little. This winter growth should be carefully managed; for if not, the plants will get weak and drawn; and when the time comes in spring for them to make a start, their vigour is gone. About November look them all over, giving those a shift into a size larger that would suffer before the following February, replacing them in the same quarters, where they may have the benefit of all the sun possible, attending to them with water, but never allowing the soil to get sour. On bright afternoons dew them over with the syringe, also the paths of the house. Small stakes should be put to each to train the leader up, which ought not to be stopped unless side shoots are not forming freely, the result of the wood being too hard when the cutting was taken. By the following February many will require larger pots, which should be well drained, laying a little moss over the crocks; then sprinkle a little soot over all, which will keep worms from entering, using good, rich, mellow loam, leaf soil, with a liberal quantity of old cow dung put through a half-inch sieve. At this stage, if they could be

placed in a Peach house at work, not too far from the glass; where the trees will shade them from the brightest of the sun, they will grow very fast. Constant attention will be needed now in watering and pinching to keep the plants in proper shape; re-pot whenever the roots have got all round the sides of the pot. When 11-inch pots are reached, they will be large plants—large enough for the ordinary purposes of decoration.

When the last pinching is performed, it should be when every shoot can be pinched at once, so that the plants may be in flower all over at one time. Whenever the roots get to the side of the pots of the last shift, begin to give manure waterings regularly until flowering is past; also syringe daily up to the time the plants are removed to the greenhouse. When past flowering let them be well ripened and put away where sharp frost cannot get to them. If brought out and pruned in January, when a vinery is to be started, they will come in very early before their time of flowering the previous year. By striking another lot in February, nice plants can be had in 6 and 8-inch pots, a size which in autumn we find more useful than any.—A. H., Thoresby (in *The Gardener*).

NEW BOOK.

My Garden, Its Plan and Culture; together with a General Description of Its Geology, Botany, and Natural History.
By ALFRED SMEE, F.R.S., &c. London: Bell & Daldy.



View of the River in Beddington Park.

EXPLICIT as is the title of this work, it conveys a very inadequate idea of what the book really contains, not because it is not sufficiently specific, but because few even of those who possess a garden are aware of the almost boundless interest it possesses and the vast extent of subjects it offers as food for the mind. When Gilbert White wrote his "Natural History of Selbourne," what feelings of wonder must have risen in the minds of his fellow parishioners to know that they had been living all their days surrounded by objects and occurrences, the mere relation of which excited the admiration of the whole community, and yet they had neither observed nor heard of them. And so it is with those who call themselves gardeners. They talk intelligently on rotation of crops, of selection and hybridisation, fruit and vegetable culture, and bedding-out and plant-growing; but beyond the mere operations of production and reproduction, we doubt much if there are many, if any, who give a thought to the other constituents which go to make up what we include by the term "a garden." No object has eluded Mr. Smee's watchful eye. The smallest insect that crawls across a flower, and stimulates with its tiny feet the

reproductive power of some great magnate of the garden, is not too small for his attention. Even the polyps and animalcules of the streams receive abundant notice; and the fish, the birds, and the garden animals receive as much attention in their turn as the gayest flowers or the most luscious fruits.

Mr. Smee's garden "is situate at Wallington Bridge, in the hamlet of Wallington, in the parish of Beddington, in the county of Surrey." The beauty of the situation may be conceived from the two illustrations we furnish, taken from the work and placed at our disposal by the author. The first is a view of the river in Beddington Park, and the other a moonlight scene looking across the lake (see page 41).

The work before us is as complete a book of the garden as can possibly be imagined, and educationally it is the best book we know to place in the hands of youth to cause them to observe and think about the objects with which they come in contact in their home life and pursuits. First of all, after treating of the topography of his garden Mr. Smee enters very fully into the geology of the garden; then he describes its general plan, how it is laid out, and how beautified, and he

concludes this latter portion by saying—"My garden presents a great variety of scenery compared with its limited extent; two spots separated by a few feet present views which differ widely. The true principle in the construction of a garden is to obtain the utmost possible effect by taking advantage of the leading features of the landscape and the most striking natural objects."

We shall continue the subject in our next.

WATERING.

If we are to accept as reliable the prognostications of the meteorologically wise, the summer on which we have just entered is to be characterised by periods of severe and protracted droughts. The datum from which this conclusion is arrived at is, the high mean temperature which has been registered in February and March, and which was characteristic of the same months of all the driest years from 1826 to the present time. Should the same order of weather be realised this year, the horticulturist, as heretofore, may expect that many of his crops will languish and be comparatively useless, unless artificial watering be resorted to in order to counteract the bad effects of long-continued drought. Therefore we make no apology for calling attention to artificial watering, and directing the inexperienced to the fact that watering may be either a great evil or a great good, according as the operation is performed.

There exist great differences of opinion as to the utility or benefit of watering at all in time of drought, and we are not at all at a loss to understand why this should be. Take, for instance, two cultivators; one applies mere paintings of water to the surface of the soil morning and evening, and leaves the surface to become hard and caked, and we are bound to believe that he finds his process do more harm than good. Another, who more correctly understands what he is about, gives regular drenchings, it may be only twice or thrice weekly, plies his Dutch hoe among his crop to keep the surface loose, and so prevent rapid evaporation; and it is not difficult to understand why he is in a position to assert the very contrary to his neighbour, because he finds his crop luxuriate in defiance of drought. Let us suppose a bed of Celery or any other moisture-loving crop to have been planted out three weeks ago, when it was perhaps moist and showery, and although it may have struck root into the bed of manure under it, a severe drought, we will suppose, sets in and continues; under such circumstances let it be treated to mere surface-sprinklings once or even twice in the twenty-four hours, and the soil between the plants to remain otherwise unheeded, it gradually gets caked, and cracks with the continued heat acting upon it. Let such treatment and such weather continue, and it will be strange indeed—especially if it be an early crop—if it does not by degrees get wiry and stunted, and eventually run to seed, and the crop and labour of watering are lost. On the other hand, let the amount



Moonlight Scene (from Mr. Sime's Garden).

The error into which the amateur and inexperienced fall in this matter is that of constant mere surface waterings instead of less frequent and thorough soakings. Water being the vehicle through which food is conveyed to plants from the soil, and in the atmosphere the preventive of excessive evaporation from the foliage, it follows that, to be attended with the desired effects, it must be administered in quantity sufficient to saturate the soil in which the roots are feeding much deeper down than any mere sprinkling can reach. And as far as artificial waterings can affect the state of the atmosphere, its power of preventing evaporation must be very limited. Not only do surface-sprinklings during seasons of heat and drought fail in securing the end desired, but the system is a positive evil, because, in the case of stiff soils particularly, the surface becomes hardened and caked, thereby rendering it a better heat-conducting medium than when loose and porous, and as a consequence evaporation is increased also. Waterings, to be of any material benefit to plants, must be given in sufficient quantity to reach their roots, and the fewer the waterings rendered necessary to keep up a state of growth the better in all respects.

of water supplied be sufficient not only to wet the surface soil, but to drench the manure down to the bottom of the trench, say two or three times weekly, applying it in the evening, and the following morning stir the surface of the bed, and spread a thin layer of dry soil from the sides or tops of the ridges over the surface of the bed among the plants. Watered after this fashion, it will be found that Celery or any other moisture-loving crop grows strongly, crisp, and of a dark green hue, and forms fine large heads fit for the most fastidious salad-eater. Nor does this latter process take much, if any, more labour than is involved in daily mere surface-sprinklings which do more harm than good. But why be so particular about keeping the surface loose? Just because a loose surface is a better non-conductor of heat than the open one, and the less heat absorbed the less moisture evaporates.

To some this may perhaps appear a trifling and unimportant difference in performing one of the most common operations of a garden in the summer months. It is not, however, so; for the difference we have pointed at involves the success or non-success of rearing vegetables fit for table in a year of

severe drought. Besides surface-stirrings after effectual drenchings of water, we would strongly advise mulchings to the depth of a couple of inches with half-decayed stable litter or leaves or short grass, as circumstances may direct. Such surface-coverings save much water-carrying, and keep the ground longer moist after watering than any other means.

In the case of sowing seeds in drills the same principle applies. After the drills are opened, give a good soaking in the bottom of the drills before the seeds are sown, and repeat the dose after they are covered in. Mere sprinklings to germinating seeds often destroy them altogether, and are worse than no watering at all.

It is usual in dry weather, in planting out flower-garden plants out of pots, to water them immediately after they are planted. So far well. But there are conditions which may prevent the water from doing the individual plant as much good as it would otherwise effect, even when a quite sufficient quantity of water has been applied. Take, for instance, plants that are what may be termed pot-bound in small pots. Let these be planted when in a dry and hardened condition with the ball full of air instead of water. It is turned into the bed or border without the ball being broken or the roots disentangled. The water applied passes into the general body of the soil, and leaves the dry ball nearly as dry as ever it was. It may, indeed, absorb moisture indirectly from the surrounding soil, but it sustains a check, and half the season passes before it makes a kindly start. Far better it is to thoroughly soak the balls before planting, and to partially disentangle the roots, and to press the soil firmly about it in planting. Then the water applied after planting penetrates the ball and the bed alike, and effects the purpose for which it has been applied.

We do not, however, wish to convey anything condemnatory of regularly sprinkling plants and the surface of the soil every evening. What we want to inculcate is, that the soil should be at the same time thoroughly wetted with less frequent soakings sufficient to reach the feeders, and the surface of the ground stirred or mulched to prevent evaporation. Surface-sprinklings are, for reasons already assigned, worse than useless. When both top and root are moistened, then the case is very different. It is not because we "pin our faith" to the weather-wise that we throw out these hints, but because they may be considered more or less applicable to the general run of seasons.—(The Gardener.)

SMOKING AT THE IPSWICH FLOWER SHOW.

CAN any other of your readers have witnessed at other flower shows a barbarism which I have seen, or rather smelt to-day—namely, a strong odour of tobacco pervading and poisoning the air of the pretty grounds in which our horticultural fête was being held? It really should be prevented. Why can so few men be at peace with the world apart from their pipe? I think your Journal might make a protest at the request of an aggrieved—MIGNONETTE.

[At the Royal Horticultural Society's garden at South Kensington notices in various languages are placed announcing, "Smoking is strictly forbidden." No gentleman ever acts in defiance of this notice. When we see a man smoking in a railway carriage or in other places contrary to known rules, we always remember the question put to one so offending, "Will not your master allow you time to smoke?"]

WILD FLOWERS IN BLOOM AT SANDHURST, HAWKHURST.

- April 17. *Polygala vulgaris*, Common Milkwort.
Orobanchis tuberosus, Common Bitter Vetch.
Veronica officinalis, Medicinal Sea Speedwell.
Melica uniflora, Sylvan Melic Grass.
 .. 22. *Dentaria bulbifera*, Coral Root.
Barbarea vulgaris, Common Yellow Rocket.
Anthoxanthum odoratum, Sweet-scented Vernal Grass.
Ranunculus bulbosus, Turnip-rooted Buttercup.
Ranunculus acris, Common Meadow Buttercup.
Orchis Morio, Green-veined Helmet Orchis.
Stellaria uliginosa, Bog Chickweed.
 .. 24. *Carex præcox*, glauca, pendula.
Brassica campestris, Wild Turnip.
Equisetum arvense, Field Horsetail (barren stems).
Alchemilla arvensis, Parsley Plant.
Quercus pedunculata, Common Oak.
 .. 27. *Lysimachia nemorum*, Yellow Pimpernel.
Sanicula europæa, Sanicle.
Neottia nidus-avis, Bird's-nest Orchis.
Hieracium aquifolium, Holly.
 .. 29. *Sherardia arvensis*, Field Madder.

- April 29. *Acer campestre*, Common Maple.
Coronopus Ruellii, Common Wart-Cress.
Allium ursinum, Ramsoms.
Myosotis arvensis, Field Forget-me-not.
Viola tricolor, Wild Heartsease.
Medicago lupulina, Common Field Medick.
Dactylis glomerata, Rough Cock's-foot Grass.
Equisetum sylvaticum, Sylvan Horsetail (barren stems).
Valeriana olitoria, Lamb's Lettuce.
Euphorbia amygdaloides, Great Sylvan Spurge
Parietaria officinalis, Pellitory.
 May 1. *Trifolium pratense*, Purple Clover.
Valeriana dioica, Small Rose Valerian.
Equisetum Telmateia, Great White-stemmed Horsetail.
Carex strigosa.
 .. 3. *Galium aparine*, Cleavers.
Alopecurus agrestis, Cornfield Foxtail Grass.
Lolium perenne, Rye Grass.
Acer Pseudo-Platanus, Common Sycamore.
Ranunculus repens, Creeping Buttercup.
Galium cruciatum, Crosswort.
Fumaria officinalis, Common Fumitory.
Sagina procumbens, Common Pearlwort.
Lepidium campestre, Common Pepper Cress.
Stellaria graminea, Minor Stitchwort.
Poa pratensis, Smooth Meadow Grass.
Poa trivialis, Roughish Meadow Grass.
 .. 8. *Trifolium incarnatum*, Carnation Clover.
Lychnis vespertina, White Campion.
Tormentilla officinalis, Common Tormentil.
Erum hirsutum, Common Tare.
Chelidonium majus, Major Celandine.
Vicia angustifolia, Narrow-leaved Crimson Vetch.
 .. 10. *Myosotis collina*, Least Forget-me-not.
Apium graveolens, Wild Cherry.
Veronica Beccabunga, Brooklime.
Potentilla reptans, Common Cinquefoil.
Lotus corniculatus, Bird's-foot Trefoil.
Bromus mollis, Common Meadow Brome Grass.
Holcus lanatus, Meadow Soft Grass.
Spergula arvensis, Corn Spurrey.
Chrysanthemum leucanthemum, Ox-eye Daisy.
Trifolium minus, Little Yellow Trefoil.
Ranunculus arvensis, Cornfield Crowfoot
 .. 13. *Scrophularia nodosa*, Common Figwort.
Rumex Acetosella, Sheep's Sorrel.
Fyrus Aucuparia, Mountain Ash.
Pyræthrum inodorum, Mayweed.
 .. 15. *Scirpus palustris*, Common Spike Rush.
Urtica dioica, Common Nettle.
Pinus sylvestris, Scotch Fir.
Potentilla anserina, Silver-weed.
Bromus sterilis, Hedge Drooping Brome Grass.
Symphytum officinale, Common Comfrey.
 .. 20. *Banum flexuosum*, Common Earth Nut.
Cerophyllum tumulentum, Rough Chervil.
Geranium dissectum, Cut-leaved Cranesbill.
Juncus bufonius, Toad's Rush.
Erum tetrasperum, Smooth-podded Tare.
Glyceria fluitans, Floating Mauna Grass.
Ranunculus aquatilis, Water Snow-cups.
Tamus communis, Black Bryony.
Briza media, Common Quaking Grass.
Anagallis arvensis, Scarlet Pimpernel.
 .. 22. *Melampyrum pratense*, Common Cow Wheat.
Lychnis Flos-æneuli, Ragged Robin.
Juncus communis, Soft Rush.
Sonchus oleraceus, Common Sowthistle.
Sisymbrium officinale, Common Hedge Mustard.
Thrinacia hirta, Hairy Hawkbit.
Hieracium Pilosella, Mouse-ear Hawkweed.
Orchis maculata, Spotted Orchis.
Orchis latifolia, Marsh Orchis.
 .. 25. *Listera ovata*, Common Twayblade.
Rhinanthus Crista-galli, Yellow Rattle.
Rosa canina, Dog Rose.
Malva sylvestris, Common Mallow.
 .. 29. *Vicia sativa*, Fodder Vetch.
Lathyrus sylvestris, Yellow Vetchling.
Alopecurus pratensis, Meadow Foxtail Grass.
Arundo Phragmites, Common Reed.
Festuca ovina, Sheep's Fescue Grass.

—FRAULEIN, Botanist.

GARDEN STRUCTURES AND IMPLEMENTS

AT THE ROYAL HORTICULTURAL SOCIETY'S BIRMINGHAM EXHIBITION.

ONE of the greatest sources of interest at the late Show at Birmingham, next to the plants and flowers, was the great assortment of implements, wirework, and mechanical contrivances which have direct reference to horticulture. It is our intention in the next week's number of THE JOURNAL OF HORTICULTURE to give an illustrated report of some of the principal exhibits in the shape of boilers and horticultural structures; at present we shall confine our attention to some of the stands of implements, &c., in the first enclosure. We will go through the stands in order.

Stand No. 1 contained Rivett's ground vinery or plant protector, a very useful and cheap form, of which more next week.

Stand No. 2.—Mr. Sawney exhibited what may be called garden accessories in the shape of garden seats, and croquet chairs, and swings; but some of the things he showed, as barrel-

tilters and housemaids' brushes and trays, hardly come up to one's notion of garden necessities.

Mr. Rogers showed, in Stand 3, a gardeners' pest-extermiator, of which we have had no experience, and we have been inundated of late with nostrums for insects; whereas the only sure pest-extermiators are cleanliness and care, syringe and pure water.

In Stand No. 4 Mr. Matthews, Weston-super-Mare, showed a very good collection of garden pottery, of superior make and quality, at reasonable prices.

Stand No. 5.—Messrs. Fellows & Bates showed two very good forms of garden lawn-mowers—the Climax, with a back delivery easily worked by a boy, up to 10-inch; and the Anglo-American, an adaptation of the Archimedean, with the improvement that it can be used either to collect the grass or scatter it, and, working with simple cogs, is not so liable to get out of order as Williams's Archimedean. Our experience with the latter is that it is invaluable for dry seasons, especially on lawns inclined to burn up, as the grass that is scattered acts most beneficially as a mulching, but in wet seasons or on rich soil it makes the grass grow too rapidly.

Stand No. 6, garden frames, will be alluded to next week.

Stand No. 7.—Mr. Baker, Chester Street, Aston Road, Birmingham, exhibited a very interesting assortment of wirework in its different branches.

In Stand No. 8, Messrs. Mapplebeck & Lowe, we had one of the most complete collections in the whole Exhibition of wirework, croquet chairs, seats, and tables; cast-iron vases and other garden decorations, as fountains, Fern and flower stands, bouquet-holders, &c. They deserve great credit for the assortment displayed, and where all was so good it is difficult to particularise, their collection of garden machinery, tools, &c., being very complete.

Stand No. 9.—Messrs. Dickson & Sons, Chester, exhibited a small tent full of stove and greenhouse plants, conspicuous amongst which were the small Palms now so much used for dinner-table decorations.

Stand No. 10.—Mr. Frederick Reynolds obtained the gold medal for the best collection of garden furniture. They were beautifully got up, but it struck us that many of them were not calculated to stand hard usage and weather; still, we must acknowledge there was much taste displayed.

Stand No. 11.—Mr. Joseph Davis had a very good assortment of thermometers and barometers, with microscopes, manure and milk tests, &c. It would be well if more gardeners made themselves acquainted with the use of the thermometer and barometer, rain-gauge, &c.

Stand No. 12.—Mr. Le Butt exhibited a self-acting hand seed-drill, which we have had in use now for two years and can highly recommend. It will drill Onions, Carrots, and all garden seeds with great accuracy, and the price is only 10s. 6d., which may be saved in seed and labour in a large garden in a very short time.

Stand No. 13.—Maw & Co. exhibited ornamental pottery for greenhouses, window-boxes, &c. Their garden labels were particularly to be commended.

Stand No. 14.—Mr. Fox exhibited wirework, Pea-guards, &c.

Stand No. 15.—Mr. William Hudspeth had a fine collection of tazzas, floral arborettes, &c.

Stand No. 16 was scarcely a garden exhibit.

Stand No. 17.—Messrs. Wood & Ivory exhibited tiles, quarries, coping, &c.

Stand No. 18.—An assortment of garden engines, syringes, pumps, water-barrows, &c.

Stand No. 19.—Mr. Chapman, Bristol Road, Gloucester, who had a silver medal, showed some very useful cut-flower exhibition and transmission cases, combined flower and fruit cases, plant-protectors for raising seeds, cuttings, and also for protecting plants during the winter, and cases for transmitting small pots of plants for table decoration. All these cases are of great utility to gardeners who have to supply fruit, flowers, or plants from the country to the family in town. We have thoroughly tested the cut-flower boxes and found them very efficient. Mr. C. J. Perry, who is so successful as a Verbena raiser and Rose and Pelargonium grower, always exhibits Verbenas in these stands.

Mr. Doulton, Stand No. 20, showed a good selection of pottery, chiefly vases and Fern cases.

Stand No. 21.—Mr. Farwig showed his patent gas calorifier, very useful for small conservatories in the suburbs of towns.

Stand No. 22 was chiefly devoted to King Croquet; No. 23 to Mr. Haynes's hydronettes, which, though good, are rather hard to work. In Stand 24 Mr. Powell showed some good fruit walls by Mr. Tuck. In Stand 25 Mr. Purser, Warwick Street, Birmingham, had his new jet d'eau (see page 481 of last volume), which seems a decided improvement on the hydronette, as it will work equally well upwards as downwards, which the hydronette will not do.

Stand 26.—Messrs. Dick Radclyffe & Co. had blinds, shading, frost-protectors, &c. No. 27.—Another collection of vases. No. 28.—Hydropulps, watering pots. 29.—Carriages, not a gar-

den necessary, we hope. Stand No. 30.—Messenger's boiler, to which we shall allude hereafter. 31.—Cast-iron labels for garden flowers, as Roses, &c., by Messrs. Bell & Thorpe, Stratford-on-Avon; very durable, but we fear they would be expensive.

Stand No. 32.—Rendle's patent. Every number in the stand we observed was called Rendle's patent, but what there was particularly novel or particularly good to deserve a patent we could not see. Grooves in brick and adaptations of wood and glass must have some very decided merit to deserve patenting.

Mr. Bennett, Stand No. 33, had a large collection of ironwork.

Stand 34.—Mr. Looker had some better-finished brickwork than Stand 32; and his new patent ventilating bricks, which may be opened and shut by means of sliding boards in grooves, seem likely to be very useful, especially for ground vineries. They are still capable of improvement and likely to be serviceable, and we shall be interested in seeing the improvements carried out so as to make them build in well with ordinary bricks.

Stand 35 did not in our mind belong to garden accessories, as the longer we can keep bicycles out of our gardens the better.

Stand 36.—Metal flower-boxes, &c. In Stand 37 were some very useful garden hand-lights with handle in centre, but the price seemed high. Stand 38.—Some small fancy boilers. Stand 39.—The Archimedean lawn mower.

Stand 40.—Some powerful garden engines, which will act as fire-engines as well, exhibited by Mr. Richard Read, 35, Regent Circus, Piccadilly, London. In Stand 41 we had again carriages, which are hardly suitable for horticultural shows, but which seem to find their place in nearly all kinds of shows, though why we hardly know.

The report on gardening machinery, especially boilers and horticultural buildings, will be continued next week.

SOME PREDATORY INSECTS OF OUR GARDENS.—No. 32.

DURING the early part of this present season some horticultural friends of mine were anxious to know whether it was likely we should have an excessive multiplication of insects in consequence of the mild winter of 1871-72. Though not pretending to be a prophet, I ventured to give an opinion to the effect that, speaking generally, it appeared as if garden pests would not be particularly troublesome, unless we had a hot and dry summer, which was not very probable. The variable spring has been followed by a summer marked as yet by a large proportion of cold and wet weather in most parts of England, and though this has destroyed many grubs and caterpillars, some species have thriven and increased beyond the average. Owing to the abundant rainfall many plants in the flower and kitchen gardens seem to have sustained less injury than usual from the attacks of larvæ, because they have been enabled to put forth an abundant leafage. Flowers and fruit, however, have suffered, and will still suffer much, in some districts; and of our constant enemy the aphid there is no lack.

I have been rather amused on some wet days in observing the effect produced upon that disagreeable-looking garden visitant, the well-known cuckoo-spit (*Tettigonia spumaria*). The steady downpour washed away its defensive covering, and sent the insect on its travels, when it would be seen wandering upon the twigs in a rather disconsolate manner, apparently aware, that though the rain supplied the moisture which is necessary to its life and growth, though it had removed its investiture of sap, the latter had an additional value as being a protection from the attacks of birds and other devourers of this species in its larval state. As soon as possible after there was an improvement in the weather *T. spumaria* was at work again busily engaged, like school-boys, in blowing bubbles, though not of soapsuds, and was ere long once more ensconced in its peculiar covering. Owing to the backwardness of the season these larvæ grew more slowly than usual, and there were many of them about at midsummer, though most years we find May is the chief month for them.

The Small Ermine Moth (*Yponomeuta padella*) was also considerably retarded in its growth this season, keeping time, however, pretty exactly with the Hawthorn, to which it is so partial; for in Kent and Surrey, and doubtless elsewhere this shrub was not in full foliage until three weeks beyond the average date in ordinary years. We observed these caterpillars in numerous colonies thriving and rapidly extending their webs from bush to bush, and from tree to tree, in spite of the showers at the commencement of June; and we could not but think that gardeners would have much less reason to complain of the injuries caused by the insect to fruit trees were they careful to deal with it in early spring on the hedges, from which it

so often is nurtured abundantly, to proceed from these to adjacent Pear or Plum trees. Conspicuous enough at the time when the webs serve as a partial protection to the larvæ from the visits of hungry birds, yet it is not so easily got rid of then as early in the season when the brood are leaf-miners. As for diminishing its numbers by the expedient suggested by one writer—viz., placing a sheet under the bushes during the season when the moths are out, and striking the former with a stick; this will certainly dislodge plenty of moths, but not render it easy to secure them, unless the habits of *Y. padella* are greatly different in some places from what they are in others. Though these moths sit on the hedges in the day seemingly torpid, they are soon roused to activity by a sudden shock, and prove nimble enough, if not strong on the wing. But, in these islands at least, the Small Ermine can hardly be called a notably injurious moth to our fruit trees; it may disfigure them by its webs, but does not touch the blossom or fruit usually, nor exhaust the strength of the tree.

Misapprehensions, as we often find, arise from very plausible appearances, and insects are regarded as formidable foes which are really comparatively harmless. The large pale-green caterpillar of the Eyed Hawk Moth (*Sphinx ocellatus*), with its seven stripes and horned tail, may be a pleasing object to the naturalist, but in the orchard the proprietor frequently picks one off an Apple tree in disgust, for its size suggests to the mind the idea that it is a remarkably destructive monster. Yet, though a caterpillar of this species will dispose of a good number of leaves in the last week or two of its life, a brood is scattered about over a great extent in most instances. A female moth will rarely deposit more than two or three eggs in one spot; flying as she does rapidly from place to place while at the work of oviposition. The preference of the species (at least with us) is manifested towards Willow and Poplar.

Various species of Lepidoptera have been included in the list of the enemies of our fruit trees, which, on a fair trial,



Liparis auriflua.

could easily prove themselves "not guilty." Some that are exceedingly injurious on the continent of Europe give no trouble in this country, either because of their rarity here or because they choose different food. Such species as the Gipsy (*Liparis dispar*), the Pale Brindled Beauty (*Amphidasis pilosaria*), are instances. The Gold-tailed Moth (*Liparis auriflua*) is one of the species which has borne a bad name for about a century and a half as one of the pests of fruit trees. The traditional story is that the insect, or the nearly allied Brown-tail (*L. chrysorrhæa*), occasioned general alarm in France in 1731 and 1732; first of all stripping the hedges and woods, and then devastating the orchards, eating not only leaves but the immature fruit. Though the people attempted to destroy them, they effected very little; cold rains, however, extinguished the

lives of most before they came to their final stage. Such is the tale, which is sufficiently unsatisfactory. This is quite certain, by the way, that the two species have been inexplicably mixed up by authors through the names having been misapplied, and the resemblance in both larva and imago being very close, has made it difficult to put matters straight. The caterpillar of the Gold-tail, a smart-looking hairy fellow, decked in scarlet, black, and white, is very common everywhere in early summer; and, feeding on the Hawthorn or "May," it is noticed by many who are ignorant of natural history, and if, in their curiosity, they handle it much, they are pretty frequently punished for so doing by getting a painful irritation of the skin, which may last hours or days. How the caterpillar produces this effect is not certain; but were the species common on fruit trees the urticating power possessed by *L. auriflua* would be a bar to its removal by hand-picking, unless by those endued with skins not particularly sensitive. The downy, white, and decidedly sluggish moth clings to the boughs or trunks of trees in July and August. The females remove the greater part of the tuft which ornaments the tail and which gives rise to the name in both the Latin and English languages.

We find no record, by any modern entomologist who has had this species under his observation, of injuries done by it to fruit trees in Great Britain; and, personally, I have sought in vain for proof that it is productive of harm, though stray larvæ may chance to be found in the orchard or garden. What would be its habit were Hawthorn scarce with us is another question. The other species referred to, *L. chrysorrhæa*, is too scarce with us to be troublesome, and it is usually found at large upon Willows and Sloe in the larval state. The habits of both are similar in most points.

A moth with a caterpillar exceedingly different from the last, bearing the English name of the "Figure-of-8" (*Episema ceruleocephala*), is given in most lists of those molesting fruit trees. In Britain it only does so occasionally—very occasionally indeed of late years—not that I suppose the caterpillar has any objection to feed upon any prunaceous plant, but there being now plenty of Hawthorn cultivated, it seems of late years to have confined itself chiefly to this, feeding sometimes, however, on the Sloe (*Prunus spinosa*), and passing the others by. Though pretty common in the London district, I have not found it making its way into our orchards. I have no doubt this is one of the species, the numbers of which are greatly reduced by the sparrows and other birds, the caterpillar being conspicuous on the hedges; nor does it readily drop, as some do, nor adopt any defensive means. The head is small and bluish-green (hence the Latin name), the body yellowish-green or dirty white, striped with yellow and studded with minute black warts; the legs and claspers are also spotted with black. The eggs having been deposited in the autumn by the parent moths, the young caterpillars are prepared to begin feeding as soon as the leaves open in the spring. They are rarely found attacking the buds. In June they become full-fed, and construct compact cocoons, fixed on the twigs and composed of fragments of leaves and silk. The moths emerge in October, or a little earlier or later. In some books a spring brood of the species is named, but this is a mistake, in this country at least, its emergence being limited to the autumn. Were it to become troublesome to fruit-growers, it could be kept under by shaking the caterpillars from the branches or by hand-picking. A still more effectual if rather tedious plan, would be the removal or crushing of the eggs, which are laid in small patches upon the twigs close to their junction with a branch. Mr. Birchell informs us that in Ireland the species is scarce, nor do I believe it is at all common in North Britain.

Such a species as the Green Pug (*E. rectangulata*), though small in size, is really much more likely to prove injurious than many of the larger caterpillars. It occurs with us on the Apple trees in gardens, and also on the wild Crab. In certain districts of France, according to recorded observations, it is so abundant as to destroy on an average about three-fourths of the blossoms, and affects both the Pear and Apple. The eggs appear to be deposited singly, and they are so placed that the young caterpillar on emergence can at once begin operations upon the immature blossoms. It is short and rather stumpy at all ages, but when young darker in colour than towards maturity, becoming then of a pale green and transparent. The back is marked with a line running from head to tail, which is sometimes narrow and indistinct, or even entirely wanting. Regarding its habits, Mr. Newman observes that the blossoms it attacks, instead of shedding their petals

in due course, retain them, and they are folded circularly over the young fruit, while they turn from white or pink to a brown. "The caterpillar enters the little chamber formed by the still united petals, and feeds in the interior of this choice domicile; begins by eating the still imperfect stamens, then devours the pistils, and lastly, the fruit itself, hollowing it out, and leaving only the rind." The adult caterpillar either descends to the earth or spins a slight cocoon in the cavity it has formed.

To abate apprehensions on the subject of the injuries thus caused, it has been suggested with some force that the work done by the caterpillar of the Green Pug is not so hurtful after all, because in the large majority of instances the trees put forth more flower-buds than can by any possibility be developed into fruit. They need to be thinned-out, and this and other species of insects may be viewed as Nature's instruments for so doing. It is quite true that in various instances the abundance or superabundance which Nature produces with no stinting hand tends, seemingly, to defeat her design. In ways of which we are little aware the balance of life is maintained nevertheless, and each year as it passes gives renewed testimony to the grand result.—J. R. S. C.

FOR THE RESCUE OF BULLFINCHES.

In a kindly pleading for small birds that appeared in your Journal some weeks since, you, or one of your correspondents, professed to have "no plea to offer for the Bullfinch." May I be allowed to say a few words to rescue my favourites from what I cannot but think the undeserved bad character of doing all mischief and no good? I was grieved to see this character stamped upon them some years ago in a letter, I think, to the *Times*, and I eagerly but vainly looked to find a better one given of them in Mr. Wood's charming book, "Our Garden Friends and Foes." For by the time I read that some Bullfinches at least do greedily eat many kinds of insects, I had kept these birds for several years, and never dreamed of offering them insects to eat; but one day, about seven years since, I was passing a Bullfinch's cage with a small moth I had caught for the gold fish, and, struck by the wistful expression in the poor bird's eye, I offered it to him, and he seized it eagerly. From that time I found that he would eat almost all kinds of small moths, gnats, house flies, the green caterpillar that feeds on Mignonette, and green Rose blight—these by beaksful at a time; but the greatest treat of all is a daddy-longlegs. I have had several bullfinches since I made this discovery, and I have found them all eat insects more or less readily; but the older the bird was when caught the more eager he was for this kind of food, probably from having had more experience of it.—E. E. E.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Asparagus beds during this month can hardly have too much manure water from the stable or farmyard tank. On light dry soils salt may be applied with advantage; but this should not be used on strong, stiff ground, as it keeps it wet in winter, and causes the roots to decay. Finish planting out the principal crops of *Broccoli* and *Winter Greens*, and proceed with planting out *Celery* as ground can be spared for it, using plenty of manure, and keeping it liberally supplied with water. A plot of ground may now be planted with any kind of close-headed *Cabbage* for Coleworts. Continue to stick advancing crops of *Peas* and *Scarlet Runners*, topping one-half of each crop of the former to prolong their season; keep the ground moist about those in a forward state, giving them a thorough soaking occasionally with water, which will help to prevent mildew. See to keeping up a supply of *Salad*, *Spinach*, &c., and sow a good bed of *Cabbage* for winter use. Keep the growing crops clean by frequently hoeing between them when the ground is dry. Cut *Mint* and other herbs sufficiently advanced for drying.

FRUIT GARDEN.

Look over espalier Pear, Apple, and Cherry trees at least once a-week, and pursue the system of stopping and shortening the shoots. The removal of superfluous wood may also be effected at this moment with advantage both to the tree and fruit; it is always advisable to afford the latter the advantage of full exposure. Let the shoots of *Peach*, *Apricot*, and *Plum* trees be laid-in at once to the wall. Complete as quickly as possible the layering of *Strawberries* for forcing next season, bearing in mind that one week now is worth two at the end of the month, that strong well-matured plants are only to be obtained by early layering and good after-culture, and that no amount of care next spring will compensate for late, and,

consequently, badly-rooted plants. The favourite sorts for forcing are Keens' Seedling, Princess Alice Maude, and British Queen; but there are others well worthy of attention, as Ingram's Prince of Wales, which for productiveness and certainty of setting beats all I have seen. Trollope's Victoria is a good bearer under heat, where very early fruit is required, Cuthill's Black Prince and the scarlets should be grown.

FLOWER GARDEN.

As the principal planting-out for the season is over (and the late rains will be of much service in promoting a free start), the usual routine of pegging down plants intended to be kept dwarf, tying others up, and keeping the surface of the beds free from weeds until it is covered by the growing plants, will comprise most of what is required for the next few weeks. In the meantime some attention can now be paid to propagating various kinds of perennial plants of which a stock is required. Pinks should now be propagated, for which see last week. Cuttings may likewise be put in of Tea and China Roses, selecting wood of the present year when it becomes a little firm at the base. Roots and bulbs of *Anemones*, *Tulips*, *Crocuses*, *Scillas*, *Fritillarias*, &c., which have been out of the ground for some time to dry, should be properly labelled and stored till the autumn, when they will be required to fill up their respective beds for spring flowering. Where a nursery or reserve garden exists for supplying the more common kinds of plants, the propagation of various subjects can now be proceeded with. Keep the smaller and seedling plants free from weeds, and lose no time in sowing perennial and biennial flower seeds for blooming next season. Quick and Privet hedges should be closely cut-in with the shears. Let them bend off a little towards the top, which will give them a better appearance; but hedges of large-leaved plants, as Laurels, Turkey and Lucombe Oaks, and Sweet Bay, must have the young wood cut back with a knife, as the shears would destroy the beauty of their leaves by cutting them. Shrubs grown to embellish Italian and geometric flower gardens, terraces, &c., should now likewise be cut into the figure they are to assume; in many cases wire will be necessary to keep the branches in their proper places at first, where afterwards the knife and the shears will suffice to keep them in proper form. Portugal Laurels, Cypress, Arbor Vitæ, Yews, Bays, and tree Box, are the plants most commonly employed for this purpose, and when cut into architectural figures are fine accompaniments to the above style of gardening. They should, however, be clipped, and two or three times during the season be cut-in to preserve correctly the required outline. Carnations and Picoetes will now demand constant attention. The aphid or green fly must be kept down, and we have never been able to discover a more effectual preventive than Scotch snuff applied early in the morning when the dew is on, or after a shower of rain, when these pests will be found congregated on the under sides of the buds. The same application will also be found a preservative against the small black shining insect which intrudes just within the points of the calyx and eats away the colour from the petals. The best means of application is to obtain a bottle of Indianrubber, which may be obtained of any stationer, in the neck of which insert a small tube—a piece of tobacco pipe will answer well—round which some waxed twine must be tightly bound. This drives the snuff with killing effect on the enemy, and does not in any way injure the bud: it will not be advisable to apply it after the flower has at all expanded. Seedlings should be immediately pricked out, shading them and watering when necessary till they have taken fresh root. Pippings may be struck on gentle bottom heat, shading from the direct rays of the sun. Fertilise those Pinks intended for seed, taking especial care that both parents are rose-leaved, with as many good qualities as possible. Continue to put in pippings. Tulip seed may now be gathered; where the stem has become yellow between the capsules and the roots the latter may be taken up. Attend to Dahlias, watering them with weak liquid manure; mulch round the roots, and insert small sticks, to which the laterals may be tied when sufficiently long. Entrap earwigs on every opportunity. As the grass of *Ranunculuses* turns yellow take them up; do not wait till the whole collection is ready, or else those which have arrived at maturity will again have begun to grow, which will most likely cause their destruction.

GREENHOUSE AND CONSERVATORY.

The beauty of most softwooded plants in the conservatory may be considerably prolonged by the use of weak manure water, which should be given as often as can be done con-

veniently. Indeed, such plants as Achimenes, Clerodendrons, &c., may be had in full beauty from June to October through being liberally supplied with manure water, but care must be taken not to give it too strong, especially at first. Keep the atmosphere as moist as can be done, but avoid damp at night by leaving sufficient air on to cause a gentle circulation, and spare no attention that will keep the plants clear of insects. Stock for autumn and winter flowering will now require some care to have it sufficiently forward to be useful at the proper time. Chinese Primulas, especially the double varieties, if at all backward, may now be placed in a close frame and shaded from the sun, when they will be found to make satisfactory progress. Cinerarias for early blooming should also be potted and started at once, choosing the strongest suckers for the purpose, and placing them in a close shady frame until they have become rooted. They are sometimes attacked by thrips, but if they are kept cool and moist, and smoked occasionally, no danger need be apprehended from this or other pests, and the plants will grow vigorously. A thorough revision of plants belonging to the greenhouse should now take place, affording them a final shift for the season, repressing irregularities of growth, and giving, where necessary, support by judicious tying. The obvious reason for shifting during summer is, that before the approach of winter the plants may possess a sufficient mass of roots to support them through that trying season.

STOVE.

Encourage the young stock for winter blossoming. Maintain a moist and comparatively high temperature. An increased circulation of air may be allowed to Orchids during bright weather that succeeds a period of gloom, the humidity constantly stagnant will otherwise have an injurious effect.

COLD PIT.

The stock here will now be growing freely, and should be examined frequently in order to see if all is right, for plants growing rapidly speedily suffer from neglect in watering or from the attacks of insects. Examine young specimens that were potted early in the season, and shift at once such as require more pot room.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

We sowed Endive, Lettuces, &c., for succession; planted Coleworts, and bent down the stems of the first winter Onions with a rake, as that stops upward growth and assists in causing the already large bulbs to swell. We planted out Celery in the beds used for bedding plants, after adding more short dung. Cleared off the ridges of Lettuces, not one of which failed in winter, and prepared for Strawberries. We cleared off the first Cauliflower, and shall prepare for Winter Greens. We should have had plenty of young plants out but for want of room. We find many of our plants are blind this season—that is, have no terminal bud. We had to pull up a number of young Cauliflowers in consequence.

FRUIT DEPARTMENT.

We have planted out Strawberry plants from pots. But for scarcity of ground they would have been out long ago, and then we should have had a better autumn crop. As stated repeatedly, the want of sufficient ground for use, and too much of pleasure ground, are a double evil. We gathered a fine lot of Black Prince, Keens' Seedling, &c., for preserving. To our fancy nothing is better than the Black Prince for this purpose; it is so hard and firm. Of course all these were netted, or we should have seen nothing.

ORNAMENTAL DEPARTMENT.

Fearful that the sun would destroy our massive beds and lines of Calceolarias, we had them watered before the rain came. They will be all the better of the watering, however, as the rains this afternoon would not have reached the roots. If we could, we would water in cloudy weather, or just before slight showers were expected. Of course on Friday, and even on this Saturday morning, we knew that in a scorching sun we watered at a great disadvantage, as the sun so soon evaporated the moisture; but then we found that in many cases we must water or have nothing to look at.

The most sensitive of bedding plants are the *Calceolarias*; they will delight in the brightest and warmest sunshine, but they will not withstand dryness and great warmth at the roots. As soon, therefore, as the ground is warm enough, we shall mulch our *Calceolarias* to secure comparative coolness and moisture at the roots. We have now before us several reports

of *Calceolarias* giving way during the last week, and resolves expressed that the growers will have no more of them. Our opinion is, that in every such case dryness and heat at the roots were the causes of failure. Secure moisture and comparative coolness at the roots, and the tops of the plants will luxuriate in the brightest and the warmest sunshine. Use fine-foliaged *Geraniums* as you may, they will not replace the yellow *Calceolaria*, and even then it is not pleasant to think that you are beaten in such a simple matter. But for appearance, short grass makes a nice mulching, as it forms a kind of felt that keeps heat out and moisture in. We prefer old Mushroom dung when we can obtain it, and we must apply something before the ground becomes warmer and drier.

Scarlet *Geraniums* should not be mulched so early, as the roots rejoice in a warm soil. There is not a section of the scarlet and pink kinds but would like a little bottom heat. It is amazing what growth and blooms can be obtained with just a little bottom heat.

To save water, we must plunge *Chrysanthemums* and *Salvias*, and shade *Cinerarias*, *Primulas*, &c.—R. F.

TO CORRESPONDENTS.

* * We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

GARDEN LADS (M. B.).—We presume you refer to the examinations by the Royal Horticultural Society. If you apply to James Richards, Esq., Royal Horticultural Society, South Kensington, you will get all the information you require.

MARKET GARDEN POTATO.—VALUE OF AN ACRE OF FRUIT GARDEN (J. W. K.).—For a first early Potato there is none better than Myatt's Prolific, and to succeed it Lapstone and Early Oxford, the former a kidney and the latter a round sort, both good croppers, and of excellent quality. Last year and this have been exceptionally bad fruit years. An acre of fruit garden may be worth £20 per annum rental, but much depends on the fruitfulness of the trees and distance from a market. We have known the rent as low as £5, and as high as £20. The produce may one year be £100, another year under £20. It is a case in which judgment is required.

VINE LEAVES (J. G. H.).—There is nothing the matter with the Vine leaves, which are those of *Vitis aestivalis*.

RANUNCULUS (Geo. Brook).—The gentleman whose initials you quote is not a seller of *Ranunculus* roots.

OXALIS (Domina).—Your *Oxalis* plants have gone to rest after blooming. They will appear again in due course. The Agave was no doubt checked in growth by repotting it, and the ungenial weather during April and May was not conducive to growth. No doubt the warm temperature we have now will favour its growth.

LILIUM AURATUM (J. R. P.).—It is difficult to say what is the cause of the depauperated form of flower of *Lilium auratum*. There are many varieties of this Lily, and it is quite possible that this may be one of the forms of it.

HERBACEOUS CALCEOLARIAS AND SHOW PELARGONIUMS AFTER FLOWERING (E. J. D.).—Throw the *Calceolarias* away, but from any you consider good save seed, in which case they should be kept in a light and airy house until the seed is ripe. The only good herbaceous *Calceolarias* are raised from seed, treating them as biennials. Now is a good time to sow seed for next year's flowering. The Show *Pelargoniums* should be kept dry, and fully exposed in an open situation. Cut them in early in August, and when they have broken shoots about an inch long they should be repotted, and placed in a cold frame.

ROSE CUTTINGS (A. A. M.).—The cuttings should be taken off as soon as the flowers are shed, when the wood will be ripe, and they should have from three to five joints. Cut them transversely below the lowest joint, and trim off the leaves from two joints of the cutting, leaving three or more if it has five joints, and insert it in rich light soil in a north border up to the part whence the leaves are removed, but no deeper. Afterwards cover with a hand-glass, keep close until the cuttings begin to grow, then admit air. Keep the soil moist, but not very wet. Another good practice is to put in cuttings at the end of September under a north wall, and by the following April they will be well rooted, and may be taken up and potted, or planted out. We do not think you could make any use of the old Roses by putting in cuttings now, but you might utilise them by inserting in November cuttings of the ripe current year's wood, removing all the eyes of the part placed in the soil, which should be two-thirds the length of the cuttings. After a year's growth they may be budded or grafted. Could you not utilise them by budding them now as they stand? You would gain considerably, and have a good show even next year. We advise you to try it, choosing well-disposed young wood.

RHUBARB PROPAGATION (Z. Z.).—Rhubarb is propagated by seed, and the seed of two or three sorts may be obtained of most seedsmen. It may be sown as soon as ripe, in September or October, in drills 3 feet apart and an inch deep, or the sowing may be deferred until March. When the seedlings

are fairly above ground thin them to 6 inches apart, and at the close of summer they may be thinned to 3 feet, leaving the strongest plants. Plants may also be raised by division, taking care to preserve to each offset a bud, some root, and a few fibrous roots. They should be planted in November or February. You may send your friend some seed or roots—the latter from October to March, and by either mode there is little fear of their not succeeding.

EARLY VINERY TREATMENT (*A Young Gardener*).—Now that the fruit is ripe it is not desirable to give the border any water, especially as the Vines are making fresh growth, which it will be desirable to check, and so secure the thorough ripening of the wood; at the same time it is necessary that the roots should not become very dry until the buds or eyes are well developed, and the wood thoroughly ripe, brown, and hard. You can hardly give the Vines too much air, accompanied with a gentle fire heat in dull weather. For the red spider we should coat the hot-water pipes with a composition of flowers of sulphur, brought to the consistency of paint with a solution of 4 ozs. of soft soap to a gallon of water, applying it with a brush to the pipes whilst they are hot. This will check the spider; but a more effectual remedy is to sprinkle the floors or border with guano, and slightly damp the house. We do not, however, advise it in your case, or only as a last resource. It will not do any harm to the Grapes, but may start or keep the Vines in growth, which you will need to keep at a minimum.

ROSES (*Rose*).—"The Rose Garden," by William Paul, will suit you as a good practical book. You may select John Hopper, Baroness Rothschild, Marie Baumann, Jules Margottin, Charles Lefebvre, Alfred Colomb, Duke of Edinburgh, Madame Alfred de Rougemont, Beauty of Waltham, Gloire de Dijon, Victor Verdier, Pierre Notting. These all succeed in pots. The best time to get them is in November.

MANETTI-STOCKED ROSES FOR SANDY SOIL (*R. Davies*).—If the Roses named are for Briar stocks, the whole surface of the sandy soil must be mulched. If they are to be budded on the Manetti stock they must be budded low, and the stock covered with earth 2 inches. It is difficult to give the exact colour of Roses. *Crimson, Red, or their shades*: Charles Lefebvre, Dr. Andry, Jules Margottin, Edward Morren, Fisher Holmes, General Jacqueminot, John Hopper, Lady Suffield, Leopold I., Lord Herbert, Achille Gonod, Madame C. Joigneux, Madame Victor Verdier, Mlle. Marie Raby, Maurice Bernardin, Prince de Portia, Vicomtesse de Cazes, Alfred Colomb, Devienne Lamy, Baronne Adolphe de Rothschild. *Rose or Pink, or shades thereof*: Perfection de Lyon, Madame Chirard, Baronne Prevost, Marguise de Castelan, William Griffiths, Cécile de Chabrilant, Madame Charles Verdier, Leopold II., extra fine. *Yellow Roses*: Gloire de Dijon, Céline Forestier, Triomphe de Reims. For a wall, *Maréchal Niel*. *Dark Purple or Maroon Roses*: Dr. Jamin, Pierre Notting, Baron Chaurand, Souvenir de William Wood, Prince Camille de Rohan, Duc de Cazes, Triomphe de Paris, Triomphe de Caen, Gloire de Dncher, John Keynes. *Rosy Blush*: Marguerite de St. Amand, La France, Abel Grand, Souvenir de la Malmaison. All the above Roses have been, or are now, blooming finely at Okeford Fitzpaine.—W. F. RADCLIFFE.

HEATING BY STEAM (*Amateur*).—For a house 50 by 10 feet, we have no faith in heating by steam, however applied, simply because you must have the water at boiling point or thereabouts in order to have steam. Your boiler 4 by 2 feet would easily heat six times the space for Cucumbers. A smaller boiler, say 30 inches in length, would heat your space; but as you have the boiler we advise you to use it, only make it a hot-water and not a steam boiler, simply by filling it with water, and taking the hot-water pipes from the top and returning them to the bottom. We cannot tell you the piping required, as you say nothing of your house except length and breadth, and a span-roofed house will require more piping than a lean-to. You would at least need two 4-inch pipes for bottom heat and four for top heat. If you tell us more about the plan of the house, we shall be able to advise more definitely.

CUCUMBER SEED (*Robert Jones*).—The seed you save from your Cucumbers this year will certainly produce the same variety next year, provided you do not allow any other variety to grow near it, and you fertilise the fruit-producing flowers with pollen from the male flowers. All you need do is to pluck one of the flowers with stamens, and dust the pollen on the point of the pistil of the fruit-bearing flower.

FRUIT OR VEGETABLE (*W. S.*).—This is what Mr. Carlyle calls "the age of talk," and many people are so fond of talk and hair-splitting that they lose themselves in a fog of words. We never knew it doubted that Mushrooms, Tomatoes, and Cucumbers are vegetables. A few weeks ago a correspondent gave the definition thus—Vegetables are used at dinner, fruit at dessert.

GLOXINIA (*W. D. A.*).—Your Gloxinia is out of health, and the leaf, being deficient of chlorophyll, is acted upon by the changes of the atmosphere.

HARDY PLANTS AND BULBS FOR CUT FLOWERS, &c. (*A Subscriber*).—What you call the white greenhouse Arum is *Calla* (*Richardia*) *ethiopica*. Roots for flowering next spring ought to be obtained now, and should be at once potted, placing them in a cold frame until they are growing freely, and they should then be removed to a light airy position in a greenhouse. The principal cause of bitterness in Cucumbers is slow growth, or allowing them to be too long in swelling. Give them more heat, so as to swell off the fruit in ten days to a fortnight after setting. Of bulbous and tuberous-rooted subjects for planting with perennials to afford cut flowers in spring and summer, the following are good—viz., *Allium fragrans*, *Anomatheca cruenta*, *Asclepias tuberosa*, *A. incarnata*, *Calliprora lutea*, *Commelina tuberosa*, *Dielytra spectabilis*, *Hepatica angulosa*, *Lencoeum verum*, *L. estivum*, *Muscari botryoides*, *Spiraea japonica*, *Triteleia uniflora*, and *Tritonia aurea*. In addition to these you will, of course, have Winter Aconite, Snowdrop, Hyacinth, Narcissus, Tulip, Jonquil, Ranunculus, Scillas, Cyclamen neapolitanum, *Comm.* and *europaeum*, Lily of the Valley, Gladiolus, double blue and red *Hepatica*, and *Lilium candidum*, *anartianum*, *Martagon*, *chalcidonicum*, *speciosum* (*lancifolium*), and *bulbiferum*; also *Alyssum saxatile*, *Arabis alba*, Wallflowers, *Daphne Cneorum*, *Delphinium alpeceoides*, *D. Belladonna*, *D. formosum*, *Dianthus cruentus*, *D. floribundus*, *D. fragrans*, *Erythronium Dens-canis*, *Gentiana acaulis*, *Hypericum calycinum*, *Iberis saxatilis*, *Iris reticulata*, *Lathyrus grandiflorus* (*Everlasting Pea*), *Lupinus polyphyllus*, *Lychnis Viscaria splendens*, *L. Haageana*, *Myosotis azorica*, *M. sylvatica*, *Paeonias*, *Phlox Nelsoni*, *P. verna*, likewise the herbaceous varieties, *Pyrethrum*, *Campanula aggregata*, *C. speciosa*, *Spiraea Filipendula plena*, *Statice latifolia*, *S. minuta*, *Thalictrum anemoneiflorum* *plenum*, *Tritoma Uvaria*, *Trollius europaeus*, *T. asiaticus*, *Veronica alpestris*, and *V. Tencurum*. You must not omit Pinks, Carnations, Violets, Primroses, Polyanthus, Auriculas, &c. The Christmas Rose, *Helleborus niger*, should be planted from now to September; the earlier the better.

TRANSPLANTING WISTARIA SINENSIS (*Mrs. B.*).—Take it up carefully early in December, plant in the open border in rich light soil, and give a moderate

watering. We presume it is to be planted against a wall with south-east to south-west aspect.

WORMS (*D.*).—You can get rid of the worms from the roots of your Camellias and Roses by putting a table-spoonful of mustard to a gallon of water and watering the plants with it. They will then come to the surface.

INSECTS ON ACHIMENES (*An Old Subscriber*).—The insects had all disappeared when we received the leaf. In all probability it has been attacked by thrips. Smoke and the application of Gishurst Compound will relieve you.

NAMES OF PLANTS (*Donna Serafina*).—*Lycium europaeum*. (*M. H. W.*).—The colour of the Clematis was so faded we could not distinguish the variety. There are now so many and some so near each other in colour, that it is not easy to name them in the state in which yours is. (*T. Sedgley*).—1, 2, 3, *Lastrea Filix-mas*; 4, *Athyrium Filix-femina*; 5, Probably *Lastrea dilatata*; 6, *Lastrea dilatata*; 7, *Asplenium Adiantum-nigrum*; 8, *Pteris cretica*; 9, *Blechnum Spicant*; 10, *Scolopendrium vulgare*; 11, *Polypodium vulgare*; 12, Probably *Lastrea Filix-mas*. (*C. S. G.*).—All scraps. 1, Indeterminable; 2 and 3, a *Selaginella*; 4, *Euonymus japonicus variegatus*; 5, Perhaps a *Funkia*; 6, A *Maranta*. (*W. Nock*).—Probably *Cactus speciosissimus* or some hybrid. (*J. L.*).—4, *Tradescantia discolor*; 7, Perhaps *T. cristata* var. The remainder are *Begonias*, which we cannot determine specially from the scraps sent; 3 is *B. parvifolia*; 5, Perhaps *B. coccinea*. (*Louis de Boulanger*).—*Lastrea Filix-mas*. The "spots on the back of the leaf" are the fructification of the plant. (*Arthenice*).—1, *Orchis apifera*; 2, *Arum maculatum*; 4, *Orchis pyramidalis*; 5, *Neottia nidus-avis*; 6, *Daucus Carota*; 7, *Onobrychis sativa*; 8, *Vicia Cracca*; 9, *Asperula odorata*; 10, *Chlora perfoliata*; 11, *Teucrium Scordonia*; 12, *Galium cruciatum*; 13, *Erythraea Centaureum*. (*C. T.*).—1, An *Aubrietia*, probably *A. deltoidea*; 2, *Lychnis Viscaria* with double flowers; 3, *L. chalcidonicum*; 4, *Echscholtzia californica*; 5, Send again; 6, *Anchusa italica*; 7, *Euphorbia Cyparissias*. (*Constant Reader*).—We must again repeat that we will not name imperfect specimens. The scraps you send appear to be—1, *A. Thibaudia*; 2, *A. Vaccinium*; 4, *Lavandula Stoechas*. (*M. B.*).—*Ptelea trifoliata*. (*A. C.*).—*Jacaranda tomentosa*. (*Julia*).—*Spiraea Ulmaria*. (*F. C. Childers*).—The spiked Grass is *Cynosurus cristatus*, or Crested Dog's-tail; the yellow flower *Lotus corniculatus*, or Bird's-foot Trefoil; and the bunched Grass is *Agrostis vulgaris*. You ought to number your specimens. (*Miss Dentie*).—Indeterminable from scrap sent. (*A. F.*).—1, a *Mesembryanthemum*; 2, a *Sedum*; 3, a *Pelargonium*, all scraps; 4, *Thalictrum*, probably minus; 5, *Lotus corniculatus*; 6, *Cystopteris fragilis*. The *Orchis* is only *O. maculata*.

POULTRY, BEE, AND PIGEON CHRONICLE.

WHICH IS THE BEST BREED?—No. 3.

PERHAPS the greatest number of poultry-keepers are those who keep a small number in a small space in a small garden, in order to obtain a few new-laid eggs. As I hinted in my first paper on this subject, it is most desirable in this case, and most profitable also, to keep one of the non-sitting breeds, and thus entirely avoid the trouble of breaking-off broody hens. This restricts the choice under these circumstances to Spanish, Polish, Hamburgs, Leghorns, or French fowls.

Where the space is very small indeed, but perfectly dry, and the fowls can and will be kept properly clean, the best breed will be the Polish. These fowls will thrive and be happy in smaller space than any other, and are the tamest also of any fowls I know. They take to petting naturally, and if only clean and dry, will keep in beautiful condition in a space many people would hardly believe. I would not in the least fear to keep four or five Polish fowls in a roosting house about 5 feet square, and a shed the same width and about 10 feet long. Other fowls can possibly be kept in such a space; but the Polish will really thrive and look well in it. The floor must be perfectly drained, drifting rain guarded against, and the shed is best filled with sand mixed with a little slaked lime in powder. Such a material is very easily kept clean with a fine rake, and if now and then a slight watering be given from a pot with dilute carbolic acid, just enough to give a smell all over, insects will be unknown. In this case, however, some gravel or grit must be provided in a trough. In a small shed under cover, with no other run out on any occasion, I believe on the whole the Polish will be found the best breed. It is not, perhaps, a good winter layer, though early pullets will do well in this respect, and warmth and good feeding will often get eggs even from hens.

With a little more run in an open yard I should prefer Spanish or Leghorns. Of the Spanish breeds the best for use is the West of England Minorca fowl, and next to these Andalusians, but the Minorca is decidedly the best, and I have often regretted that so useful and really handsome a breed is not recognised at shows. It is harder than the White-faced breed, far larger as a rule, and decidedly not so dry in the flesh. Andalusians are similar in hardness, but smaller, and do not lay such large eggs. Hardier than either, however, is the American Leghorn, which is very evidently a Spanish crossed with some other breed. This fowl is as hardy as a Houdan or Brahma, and as good a layer as any fowl I know. Only the White is yet known in this country, the coloured variety being as yet rare and highly prized, but I am assured that the coloured Leghorn is even a better fowl than the White. Be this as it may, I can thoroughly recommend the Leghorn as a most useful fowl, one of the hardiest and best layers we have, and one which will thrive in a small yard, say about 12 feet square for four or five fowls. It is as yet unspoiled in its useful qualities by the artificial breeding of fanciers, and whatever be its fate as a fancy variety, must be regarded as

one of the most valuable breeds yet added to our yards. So far as I know it has the further merit of not being as yet much subjected to the vice of feather-eating.

Of French fowls, the only one worth notice is the Houdan; but in confined quarters I cannot, from the accounts I have from personal friends, give such a good character of this breed as some have done. By all accounts it is a first-rate breed for even a small grass run, but in confined yards all those who keep it within my own knowledge fail to find it very satisfactory; besides which it is peculiarly liable to the feather-eating disease or vice, whichever it be. I believe all who keep Houdans penned up have to suffer from this sooner or later; and I would not, therefore, advise this breed in the circumstances I am considering, though with a moderate share of grass scarcely any breed will surpass it as a profitable fowl. It does not need a great deal of room, however, and a grass plot about 25 feet square will keep a cock and five hens well. Should this be at command, I think the Houdan will be the best breed, being better than the Leghorn in quality for table.

Hamburgs are not, I am sorry to say, at all adapted for the small space now under review, unless perhaps with one exception. I say I am sorry, because to my eye the Hamburg, even more than the Game, is in contour the very ideal of beauty in fowls. As a rule, however, these beautiful birds need a good run to do them justice, and if penned up are unsatisfactory. The Silver-spangled, however, can be kept in a rather small yard if kept clean and dry. I would not advise it, but if anybody be so in love with the breed as to be unable to "cotton" to any other, he may keep Silver-spangles even without grass with profit and success. I once kept Golden-pencils also in a very small yard, and they laid well, but when I sold them the purchaser did not find them answer, and in a few months lost them all by roup. Perhaps his management was in fault, but in spite of their beauty and many good qualities, I cannot speak of Hamburgs as the best breed for a small pen, with the attention most people give their fowls.

Some may wonder at my not here recommending my own favourite fowl the Brahma. I reply that this fowl is not at all suitable for our present purpose. If kept it will be always annoying by getting broody, and it also makes too great a quantity of manure to be suitable for small pens which need cleaning continually. Its proper place I shall endeavour to point out in another paper.

To sum up, then. For the very smallest space I would say Polish; for a little more one of the Spanish varieties or Leghorns, much preferring the Leghorn as hardier and a better layer; and for a small grass plot either Leghorns or Houdans. Strains, of course, differ in practical merits, and some peculiar situations seem as if they would not suit particular fowls, but as a rule, where no chickens can be reared I think these will be found the best breeds.—L. WRIGHT.

BOSTON POULTRY SHOW.

YEAR by year the Boston Show increases in importance, and certainly the unwearied attention paid by the Committee deserves success. None could strive more than they have done to insure the confidence of exhibitors, and entries from most of the principal breeders in the kingdom prove how highly the general management is appreciated. This year, however, the trouble and anxiety of those gentlemen who undertook the poultry arrangements were greatly increased by the fact that although the tent was duly erected, and the trusses and general woodwork properly fixed according to the time appointed, the wire poultry pens did not arrive till about six on the morning of the Show day. The task of seeing to the birds being properly fed and watered immediately on their arrival was therefore only accomplished by a greatly increased amount of exertion on the part of the acting Committee. Such non-fulfilment of engagements is most reprehensible, and might with a less energetic committee have entirely compromised the future standing of the Show. Certainly it would be far better to hazard the pens being on the ground a day too soon than one too late. We hope to find this very narrow escape may act as a salutary caution not to sail so close to the wind on future occasions when exhibition pens are despatched from show to show.

Grey *Dorkings* were mostly in anything but exhibition feather, but a few good specimens were shown. *Cochins*, whether the Buff or the Partridge-feathered, were particularly good, but we cannot say the same of the *Brahmas*, which were almost without exception in very indifferent feather; the Dark, however, were much better than the Light. It is impossible to meet with better specimens of *Hamburgs* and *Spangled Polands* than those at Boston, and here Mr. Beldon, of Goststock, stood forward with pen after pen of his best birds. *Spanish* for so late in the season were quite a strong feature of this year's Show, more especially a few grand hens. In *Game*, a fine pen of Red Piles, such as are seldom exhibited, took the Game cup, and they were shown in a condition that cannot but tell favourably in all cases of close competition. There were also a few really fine

Brown Reds, but mostly in soft plumage. The *Bantams* were good throughout, but not even a single Sebright of either colour was exhibited.

The *Turkeys* and *Geese* were alike of good quality.

A noble pair of *Storks* showed admirably in a large pen expressly erected for their accommodation; they were in fine health and feather, exceedingly tame, and being placed exactly opposite the entrance to the tent, proved a most attractive feature. Some Silver Chinese Pheasants were unfortunately exhibited in very indifferent plumage.

Among most of our principal amateurs the prizes in the *Pigeon* classes caused an unusual amount of emulation. In Carriers this district never before attained such great distinction. Barbs and Pouters were equally strong classes, and the *Almonds* were not less noteworthy. Trumpeters were without doubt of remarkable perfection, and the general classes of *Toys* were much beyond these classes met with at most shows of Pigeons. We are glad to announce the Show has proved a great pecuniary success.

DORKINGS.—1, E. Leech. 2, W. H. Robson.
COCHINS.—*Buff*.—1 and Cup, H. Lacy. 2, H. Lloyd, jun. c, E. S. Smith. *Any other Variety*.—1, C. W. Brierley. 2, R. S. S. Woodgate.
BRAHMA.—*Light*.—1, H. Beldon. 2, Rev. H. W. Hutton. *Dark*.—1, H. Lacy. 2, E. Leech.
SPANISH.—*Black*.—1, H. Beldon. 2, F. Dixon. *hc*, C. W. Brierley.
HAMBURGS.—*Golden-spangled or Pencilled*.—1, H. Beldon. 2, T. Love. *hc*, C. W. Gibbs. *Silver-spangled or Pencilled*.—1 and Cup, H. Beldon. 2, W. Scrimshaw.
GAME.—*Black-breasted Reds*.—1, E. Aykroyd. 2, Withheld. *Brown-breasted Reds*.—1, H. E. Martin. 2, E. S. Smith. c, C. W. Brierley. *Any other Variety*.—1 and Cup, C. W. Brierley. 2, E. Aykroyd. c, H. C. Martin.
BANTAMS.—*Game*.—*Black-breasted Reds*.—1 and Cup, Messrs. Newbitt. 2, W. F. Addie. c, W. Adams; J. W. Morris. *Game*.—*Brown-breasted Reds*.—1, W. Adams. 2, G. Morling. c, J. R. Robinson. *Any other Variety*.—1, R. H. Ashton. 2, T. E. Thirtle.
FRENCH FOWLS.—1, W. Dring. 2, G. W. Hibbert (*Crève-Cœur*).
ANY OTHER VARIETY.—Cup, 1 and 2, H. Beldon. *hc*, W. K. Patrick; W. Cutlack, jun. c, R. S. S. Woodgate.
LOCAL CLASS.—1, R. D. Borne. 2, C. Groom. c, Master W. Mastin.
SELLING CLASS.—1, H. Beldon. 2, E. Leech. *hc*, C. W. Brierley. c, E. S. Smith (*Houdans*).
DUCKS.—1, E. Leech. 2, W. Dudding. *hc*, W. H. Robson (2).
GEES.—1, E. Leech. 2, Mrs. H. Peart.
TURKEYS.—1, E. Leech. 2, R. Teat, Boston.
PHEASANTS, &c. (Or any variety of Fancy Birds).—1 and 2, G. W. Thomas.

PIGEONS.

CARRIERS.—*Black*.—1 and Cup, R. Fulton. 2, S. J. Taylor. *hc*, R. Fulton; E. C. Stretch. *Dove*.—1, R. Fulton. 2, H. Yardley.
POUTERS.—1, R. Fulton. 2, H. Pratt. c, H. Yardley.
TUMBLERS.—*Almond*.—1 and c, R. Fulton. 2, S. J. Taylor. *hc*, R. Fulton; J. Ford (2). *Any other Variety*.—1, R. Fulton. 2, S. J. Taylor. *hc*, R. Minnitt; H. Yardley. c, R. Fulton; J. S. Cater.
BARBS.—1 and 2, R. Fulton. *hc*, R. Fulton. H. Yardley; T. H. Dows.
TURBOTS.—1, S. J. Taylor. 2, H. Yardley. c, R. Fulton; H. Beldon.
ANY OTHER VARIETY.—1, R. Fulton (Black Trumpeters). 2, H. Yardley (*Tintettes*). *hc*, A. Parsons; R. Fulton; H. Beldon; J. T. Cater; G. W. Thomas; C. L. Gilbert; E. C. Stretch; S. J. Taylor (3). c, H. A. Saddington; J. H. Thomas (*Runts*).
SELLING CLASS.—1, J. R. Capps. 2, H. Beldon.
LOCAL CLASS.—1, G. W. Thomas (*Yellow Pouters*). 2, R. D. Borne (*Dun Carriers*).
JUDGES.—Mr. Hewitt, of Birmingham, and Mr. Massey, of Spalding.

SCOTTISH METROPOLITAN CAT AND RABBIT SHOW.

THIS was held in the Hall of the Royal Gymnasium, Edinburgh, on the 5th and 6th inst. The following is the list of awards:—

BLUE OR SILVER TABBY.—1, A. Clark, Glasgow. 2, Miss M'Kerracher, Stockbridge.
BLACK.—1, Mrs. Bremner, Edinburgh. 2, J. W. Walker, Edinburgh. c, J. Macleod, Edinburgh.
BLACK AND WHITE.—1, Master J. S. Oswald, Leith. c, J. Black, Edinburgh.
SPOTTED TABBY.—1, Miss E. Angus, Edinburgh. 2, J. Milligan, Portobello. *hc*, A. Thomson, Edinburgh.
SHORT-HAIRED WHITE.—1, A. G. Darling, Edinburgh. 2 and *hc*, J. Robertson, Berwick.
RED TABBY.—1, Withheld. 2, Miss Murray, Edinburgh.
BEST MARKED KITTEN (Any variety).—2, W. Cowan, Edinburgh. 3, Miss Young, Leith.
TORTOISESHELL AND WHITE.—Disqualified, Mrs. Hood, Edinburgh.
BROWN TABBY.—1, Mrs. W. Darling, Morningside. 2, A. F. Gray, Stockbridge, Edinburgh. *hc*, Mrs. Wishart, Edinburgh; Master G. R. Sinclair, Edinburgh. c, Mrs. Sibbald, Edinburgh.
BLUE TABBY.—1, Mrs. Bremner. 2, W. Charles, Edinburgh. c, R. Dawson, Edinburgh.
BLACK.—1, Mrs. Scrivenor, Edinburgh. 2, Mrs. W. Hogg, Kingsknowes, Slateford. *hc*, Miss Burnett, Morningside; Miss Ramsay, Edinburgh. c, Mrs. Donaldson, Edinburgh.
BLACK AND WHITE.—1, Miss Leef, Portobello. 2, Mrs. A. Kirkhope, Edinburgh. *hc*, J. Glass, Edinburgh; Mrs. Simpson, Edinburgh. c, J. Mackay, Edinburgh.
SPOTTED TABBY.—1, G. Dyson, York. 2, J. Alexander, Gorgie Mills. Equal. W. Horvey, Edinburgh. *hc*, A. Elart, Edinburgh; J. Fairhome, Edinburgh; Mrs. Caravanna, Edinburgh. c, G. Tosh, Edinburgh; J. Simpson, Leith; Mrs. Garson, Edinburgh.
SHORT-HAIRED WHITE.—1, H. J. Blane, Edinburgh. 2, J. Gillespie, Edinburgh. *hc*, W. Burton, Lothian Burn. c, J. Brown, Edinburgh.
RED TABBY.—1, J. Brown, Edinburgh. 2, J. Irvine, Edinburgh. Equal. E. Cumpston, Northampton. c, J. G. Procter, Edinburgh.
ANY OTHER VARIETY (such as *Manx*).—1, Withheld. 2, Mrs. Barclay, c, A. Wilson, Edinburgh.
TORTOISESHELL.—1, Withheld. 2, E. Horner, Harewood, Leeds. *hc*, J. Storie, Prestonkirk.
TORTOISESHELL AND WHITE.—1, Mrs. Heath, Dalkeith. 2, J. Hogg, East Linton. *hc*, T. Hastie, Edinburgh.
BLUE OR SILVER TABBY.—1, Mrs. R. Young, Leith.
BLACK AND WHITE.—2, J. D. Malcolm, Edinburgh.
SPOTTED TABBY.—1, C. Crighton, Edinburgh. 2, Mrs. M'Donald, Edinburgh. *hc*, W. Hannah, Stockbridge.

ANY OTHER VARIETY (such as Manx).—1, E. Smith, Edinburgh. 2, W. Brown, Tranent. *hc*, Miss Smith, Edinburgh.
BEST MARKED KITTEN.—1, J. Jeffrey, Edinburgh. 2, J. O. Smith, Glasgow.
 3, Mrs. Shortcock, Leith. *c*, Mrs. Irving.
PURE WHITE.—Silver Medal, J. Fraser, Edinburgh; Miss Bonar, Edinburgh.
UNUSUAL COLOUR.—1, Miss S. Jack, Newington.
PURE WHITE.—*hc*, and recommended for a prize, T. Johnson, Edinburgh.
TABBY.—1, Mrs. Butters, Liberton. *hc*, R. Coxson, Edinburgh.
UNUSUAL COLOUR.—1, Mrs. J. Anderson, Edinburgh. 2, T. J. Jack, Edinburgh.
PURE WHITE.—1, Miss Hales, Canterbury. *hc*, Miss S. A. Pocock, Great

Berkhamstead.
TABBY.—1, Withheld. 2, Major Pearson.
UNUSUAL COLOUR.—1, Withheld. 2, Miss Hales.
LONG-HAIRED KITTEN.—1, S. A. Pocock.
HEAVIEST CAT.—1, Mrs. Clark, Edinburgh (20 lbs). 2, Mrs. Scrivener (18 lbs).
 3, Miss McKerracher (16 lbs).

LITTER OF KITTENS (not less than three in litter, to be exhibited with mother).
 1, W. Westwater, Royal Gymnasium, Edinburgh. 2, Mrs. Hogg, Edinburgh.
hc, Miss Ruthven, Edinburgh. *c*, A. Hope, Dalkeith.

EXTRA PRIZES (presented to the Working Classes by the Scottish Society for the Prevention of Cruelty to Animals).—1, Mrs. Butters, Liberton. 2, J. Brown, Edinburgh. 3, J. Alexander, Gorgie Mills. 4, J. G. Archibald, Leith. 5, Mrs. Bremner.

RABBITS.

LOP-EARED (Yellow and White).—1, T. C. & H. Lord, Huddersfield. 2, A. H. Easton, Hull. 3, C. King, St. John's Wood, London. *hc*, G. Johnson, Wadcroft, Kettering.

LOP-EARED (Self-coloured).—1, T. C. & H. Lord. 2, W. H. Webb, jun., Coseley, Bilston. 3, J. Hume, York. *hc*, J. Irving, Blackburn. *c*, A. H. Easton; H. Cawood, Thorne; J. Wharton, York; W. H. Tomlinson, Newark-on-Trent.

LOP-EARED (Black and White).—1, G. Johnson. 2, J. Irving. 3, A. H. Easton. *hc*, A. L. Pearce, Thorne. *c*, H. Cawood.

LOP-EARED (Grey and White).—1, A. H. Easton. 2, G. Johnson. 3, C. King. *hc*, J. Liddell, Binkbonny, Craigleith. *c*, W. H. Webb, jun.; W. H. Tomlinson.

LOP-EARED (Tortoiseshell).—1 and Cup, A. H. Easton. *hc*, C. King.
SILVER-GREY.—1 and Medal, S. G. Hudson, Hull. 2 and 3, J. Irving. *hc*, S. G. Hudson. *c*, H. Munroe, Hull; A. H. Easton.

DUTCH (Any colour).—1, A. H. Easton. 2 and *hc*, S. G. Hudson. 3, W. Whitworth, jun., Manchester. *c*, W. Whitworth, jun.; G. Johnson; S. G. Hudson (2).
HIMALAYAN.—1, W. Whitworth, jun. 2, A. H. Easton. 3, W. H. Tomlinson. *hc*, A. L. Pearce.

ANGORA.—1 and *hc*, W. Whitworth, jun. 2, A. H. Easton. 3, W. H. Tomlinson. *c*, F. Storie, jun., Prestonkirk; W. G. Hancock, Northampton.

ANY OTHER VARIETY.—1 and *hc*, W. Whitworth, jun. 2, S. G. Hudson. 3, C. King. *c*, C. King; W. Whitworth, jun.

JUDGES.—*Cats*: James M'Bain, Esq., M.D., R.N., Logie Villa, Trinity, and Mr. A. Fairgrieve. *Rabbits*: Mr. Charles Rayson, Ivy Lodge, Didsbury.

SNATH AGRICULTURAL SOCIETY'S POULTRY SHOW.

THE eighteenth annual Show of the Snaith Agricultural Society was held on the 4th inst. in Sherbourn Park, which was kindly lent by the proprietor. The day was exceedingly hot, but the pens being well placed under a number of well-grown trees, the birds did not suffer on that account. Considering the inducements were not large there was an excellent entry, and for the time of year the birds were mostly in very good order.

Mr. Julian showed some excellent Brown Red Game, and the Piles from Mr. Brierley were almost perfect. *Hamburghs* were very poor, and the *Bantams* only of moderate quality. In single cocks a very good Duckwing was first, and a Golden Poland second. *Turkeys* and *Geese* were good, but there was only one pair of *Ducks*, and these were Whistlers.

In *Pigeons* Mr. Harvey won most of the prizes offered; the quality of the birds was first-rate, and several extra prizes were awarded. In the Variety class the first was awarded to Blue Pouters, the extra first to Red Magpies, the second to White Dragons, extra second to Blue Runts, and third to Red Barbs.

Rabbits were good and well shown in all classes. For Lopeared bucks Messrs. Lord won first with a handsome Sooty Fawn, the second being Tortoiseshell. In does Messrs. Lord also were first with Fawn and White, the second being Yellow. In the Variety class many of the Himalayans were young and dirty; but the first-prize Silver-Grey and second-prize Himalayan were models of their kind, as also the pretty little Fawn Dutch, to which a third prize was awarded.

There was also a nice show of *Canaries* and other birds, and several handsome *Parrots* were lent for exhibition.

GAME—Black or other Red.—1, H. M. Julian, Hull. 2, C. W. Brierley. *hc*, F. Sales, Crowle. *Any other Variety*.—1, C. W. Brierley. 2, H. M. Julian. *hc*, F. Sales.

SPANISH—Black.—1, C. W. Brierley. 2, W. Harvey.
COCHIN-CHINA.—1, C. W. Brierley. 2, W. Harvey.

HAMBURGH—Golden-spangled.—2, W. Appleyard, Low Ackworth. *Silver-spangled*.—2, H. Claybourne, Sykehouse. *Golden-pencilled*.—2, W. Appleyard. *Silver-pencilled*.—1, W. Appleyard. 2, G. Morley.

DORKINGS.—1 and *hc*, W. Moffitt, Gooles. 2, W. Harvey.
BANTAMS.—Game.—1, W. F. Falthorpe, Carleton. 2, W. Harvey.

Any other Variety.—1, R. H. Ashton, Mottam. 2, W. Harvey.
ANY OTHER VARIETY.—1, W. Harvey. 2, W. Appleyard (Black Hamburg).
ANY BREED.—Cock.—1, F. Sales. 2, W. Harvey. *hc*, C. W. Brierley.

TURKEY.—1 and *hc*, A. Martin, Rawcliffe, York. 2, J. E. Croft, Blythe.
GEES.—1 and *hc*, Miss Norwood, Fox Gates. 2, J. Maister, Barlow.
DUCKS.—1, C. W. Brierley.

GUINEA FOWLS.—1, Miss Carr, Balne. 2, G. Cooke, Gownall Broach.
EXTRA STOCK.—1, C. Wheatley, Barlow. 2, R. C. Empson.

PIGEONS.—*Carriers*.—1, W. Harvey. 2, W. W. Fowler, Pontefract. *Tumblers*.—1, W. Harvey. 2, W. W. Fowler. *c*, J. E. Crofts, Blyth. *Jacobins*.—1, W. Harvey. 2, W. W. Fowler. *Turbits*.—1, W. Harvey. 2, H. Whittaker, Heslington. *Owls*.—1, W. W. Fowler. 2, W. Harvey. *hc*, C. Dennison, Halifax.

Any Breed.—1, W. Harvey. Extra 1, J. E. Crofts. 2, W. G. Waters, Elsham. Extra 2, C. Dennison (Runt). 3, W. W. Fowler (Barbs). *hc*, J. Hairsine, Hull (Barbs); J. E. Crofts (Magpies).

FANCY BIRDS.—*English Canary*.—1 and 2, J. Wright, Snaith. *hc*, L. Morris, Snaith; Miss Widdop, Snaith. *Belgian or Foreign Canary*.—1, F. Smith.

Gooles. 2, A. Chesney, Gooles. *Any Variety*.—1, A. Chesney. 2, Mrs. E. E. Clark, Cowick Field. *hc*, E. Shipman, Selby; R. Stones, Cowick (Love Birds); W. Chesney (Goldfinch Mule).

RABBITS.—*Lop-eared*.—*Buck*.—1, T. H. & H. Lord, Huddersfield. 2, C. Gravi, jun., Thorne. 3, S. Ball, Bradford. *hc*, H. Cawood, Thorne. *Doc*.—1, T. H. & H. Lord. 2, S. Ball. *hc*, C. Gravi, jun.; R. Leggett, Thorne. *Any other Variety*.—1, R. H. Glew, Wakefield. 2, S. Ball, Bradford. 3, C. Gravi, jun. (Dutch). *hc*, J. Hairsine, Hull (Himalayan); Master S. M. Peace (Himalayan).

Mr. E. Hutton, Pudsey, was the Judge.

PIGEONS AT THE BIRMINGHAM SUMMER SHOW.

(From a Correspondent.)

Carriers.—Black cocks were an extraordinarily good class, the cup going to a bird good in all points. Every bird in this class was worthy of a prize. In Dun cocks, Mr. Yardley exhibited a grand bird that ought to have been placed second. For Blue cocks, the cup and third prize went to birds of good colour, grand style and carriage, good in eye and bill wattle—in fact perfection. Second came a very stylish bird rather deficient in bill wattle. The second and third prizes should have been reversed. In Black hens, a grand hen, good in all points, was first, and good birds were second and third. In this class was exhibited a young Black hen that ought to have been placed second; she was a perfect gem, good in all points—in fact perfection. In Duns, the best hen in the class was exhibited by Mr. Massey, and passed over without notice. For a Blue or Silver hen the cup went to a very good bird. The third-prize hen, a Silver, ought not to have been in the prize list. Mr. Watts exhibited a Blue that certainly should have obtained the second place. This was a good class. The class for young Carriers bred in 1872 was a strong one, numbering forty pens. The cup went to a promising young bird, and the second prize to one far superior.

The Carriers, as a whole, were a grand display, and were acknowledged by all to be the best lot ever seen together, especially the Blues. The seven classes of these birds numbered no less than 130 pens.

Pouters.—The first and second-prize birds were Blues, the third Yellow. Mr. Dew exhibited a very good Black. In hens the cup went to a bird rather poor in colour, stiff-winged, and blind in one eye. A Red was second; a good Yellow hen third. Taking these two classes as they were judged, Mr. Fulton certainly should have obtained the cup.

Fantails.—In White, the cup for the best Fantail was awarded to a fair bird. Mr. Tomlinson and Mr. Vandermeersch obtained the second and third prizes respectively. This was an extraordinarily good class, and a most difficult one to judge; still, I think, the best bird was shown by the Rev. W. Sergeantson, Pen 1092. Any other colour—good birds were first and second. I was pleased to see that fanciers are beginning to cultivate Blacks and Yellows, as several good birds of these colours were shown by Mr. Edge and Mr. Choyce.

Barbs.—In Black or Dun, the cup went to a Dun in very bad condition. Second came a Black far superior. This was a very good class. For any other colour, the first prize went to a Yellow, the broadest-sculled bird I remember to have seen. A good Yellow was second, and a good White third. Taking these two classes as they were judged, certainly the cup should have been awarded to Mr. Yardley.

Tumblers.—Almond mustered seventeen pens, and were the finest lot of birds seen together for some time, the cup going to a good bird. Of Short-faced Tumblers, Any other variety, there were twenty-four pens. First came a Red wholefeather, second a Black Mottle, a perfect bird. These should have changed places. A good Blue Beard was third, and Silver Baldheads highly commended. In Muff-legged Tumblers, Mottle, Rosewing, or Redbreast, a Red Rosewing was first, second a Black Mottle, third a Redbreast. All three birds were good, and shown in good feather. In Muffed-legged Tumblers, Saddle, good Blacks were first and second, a Blue third. In Muffed-legged Tumblers, Badge, a nice Blue was second, a Black third. With regard to the marking from which they obtain their name (from Badge), we can hardly understand, as the many fanciers of this variety all want a different marking on their birds. For any other variety, first and second came Blue and Silver, shown in splendid condition, third a good Blue; and Mr. Massey also exhibited a very nice Yellow. These birds were all self-coloured and very pretty. For Clear-legged Tumblers, any variety, a very nice Red Mottle was first; a Black Mottle and Red Bald-head respectively second and third. This was a good class.

Jacobins.—The cup went to a Red, too large and coarse. Second and third were a Red and Yellow, either bird being superior to that which won the cup. They were smaller, better in hood and frill, shorter in beak, and had small round heads. There were also some very good Blacks and Whites exhibited by Mr. Van Haansbergen, and by Mr. Thompson the best Blue I ever saw. This was a remarkably good class of forty-one pens.

Turbits.—A very good Silver took the cup; the second-prize bird was a Silver, the third a Blue. This was a strong and good

class of forty-three entries, and consisted of some of the best Red, Yellow, Black, Blue, and Silver Turbits ever seen together. *Owls* (English).—The cup went to a good Blue cock, the second prize to a White, the third to a good Silver. I am pleased to see that fanciers are taking up this long-neglected variety, and many will be pleased to hear that there were twenty-nine pens of English Owls. Owls (Foreign), were remarkably good, there being eighteen entries.

Nuns were very good—forty-six entries. The majority of the birds were in good condition; a few of them looked as though the scissors had been freely used.

Trumpeters were a grand class, consisting of all known colours, and were represented by twenty-eight entries. The cup was awarded to a nice bird, but inferior to Pens 1446 and 1447, which were acknowledged by all fanciers to be simply perfection.

Dragoons.—Blues were a good class. The first and second-prize birds were far too coarse for Dragoons. The third-prize bird was far superior to the other winners. In Yellow or Red, a Yellow was first, a Yellow and Red respectively second and third. The second-prize bird by many was considered the best in the class. For any other colour, a bird too dark to be considered a Silver, and far too coarse for a Dragoon, was first, a good White was second, a brown-barred Silver third. This bird, too, was far too coarse for a Dragoon. In the three classes there were one hundred entries, consisting of some of the best birds in the fancy. The judging of these classes was considered bad. Young Dragoons bred in 1872 formed a good class of twenty-nine entries of all colours, and were well judged.

Antwerps.—The Blues were a good class. The Duns, always the strongest class of the Antwerps, numbered thirty entries. The cup bird was too thin in bill, had very bad-coloured bars, and was dappled or strawberry-backed. The third and very highly commended birds should have been first and second respectively. The Any other colour class was good, and Mr. Ludlow proved himself, as he always is in Blue Chequers, invincible, and took all three prizes. Mr. Wright exhibited a Red-chequered hen that should have been noticed. Homing Antwerps were represented by fifty-four pens of all colours. The cup bird, entered at £2 2s., was immediately claimed. I am at a loss to understand how this class of birds are to be judged in a show pen.

Swallows were a good class, consisting of Black Reds, Yellows, and Blues.

Magpies were represented by twenty pens.

Archangels were an extraordinarily good class, mustering twenty-three pens.

Any other variety.—The cup was awarded to Satinettes evidently trimmed. This was a good class, made up of Satinettes, Brunettes, Blondinettes, Sultanas, and White Carriers.

Selling Class, Cock or Hen.—This consisted of most of the varieties of Pigeons; the prizes were respectively awarded to Dun Carriers, Blue Dragoons, and Black Carriers. Pairs were represented by many varieties. The first prize went to a pair of Black Carriers, which brought £5 5s. when sold by auction. Black Barbs were second.

In conclusion, although I have criticised the awards of the Judges, I must add that, considering the work which had to be done, the awards gave general satisfaction; and the Committee are to be congratulated on the successful issue, as the entries for Pigeons alone amounted to 962 pens, the largest number ever yet obtained at any show in the world. The birds were well attended to, the whole of the Carriers and Barbs being fed out of tin pans fastened inside their pens. The only drawback to the success of the Show was the continued rain. The Committee remained with the birds all night, an example which I think worthy of being followed. The Show was visited by all the leading fanciers of the present time, and one and all said that it was the show of shows.

SILVER DRAGONS' BARS.

Upon the authority of such gentlemen as Mr. Harrison Weir and Mr. Jones Percivall, surely this threadbare argument respecting Silver Dragons' bars should be finally closed. I most decidedly agree with the above-named gentlemen, and should unquestionably give the prize to Silver Dragons with black bars, were they in all other points equal to birds with brown bars, and where I have the pleasure of judging I shall certainly adhere to this text. Within the last twenty years no fancier of Blue and Silver Dragons has improved the breed so much as Mr. J. Percivall, in proof of which the majority of the winning pairs for the last few years were either bred by him or descendants from his celebrated strain.—THOS. RIDGWAY.

I WAS much gratified at the decision of the Judges in the awards of prizes in the Silver Dragoon class at the late Birmingham Summer Show, thereby endorsing my long-since-expressed opinion that Silver Dragons should decidedly have black bars, and not brown bars as some fanciers erroneously imagine. I was still further gratified on perusing your impression of the 4th inst. to find a letter on the subject, penned by so good and

old a fancier as Mr. Harrison Weir, which still further goes to confirm my views, Mr. Weir very properly advocating the black bar as correct. I trust after this the brown-barred fanciers will see the error they have fallen into.—J. PERCIVALL, Peckham.

VALUE OF POULTRY MANURE.—From actual experiment we found that the droppings from four Brahmas for one night weighed in one case exactly 1 lb., and in another more than three-quarters, an average of nearly 4 ozs. each bird. By drying, this was reduced to not quite 1½ oz. Other breeds make less; but allowing only 1 oz. per bird daily of dry dung, fifty fowls will make, in their roosting house alone, 10 cwt. *per annum* of the best manure in the world. Hence half an acre of poultry will make more than enough manure for an acre of land, 7 cwt. of guano being the usual quantity applied per acre, and poultry manure being even richer than guano in ammonia and fertilising salts. No other stock will give an equal return in this way, and these figures demand careful attention from the large farmer. The manure, before using, should be mixed with twice its bulk of earth, and then allowed to stand in a heap, covered with a few inches of earth, till decomposed throughout, when it makes the very best manure which can be had.—From WRIGHT'S *Illustrated Book of Poultry*, for July.

NEW YORK POULTRY SOCIETY'S PRIZE ESSAY.—The prize of one hundred dollars offered by the New York Poultry Society for the best essay on the breeding, management, and description of poultry suitable to the climate of America, has been awarded to Mr. James Long, of Forest Hill (late of Plymouth). Adjudicators.—Rev. H. Ward Beecher, Hon. Daniel Moore, and Orange Judd.

BEES AND HONEY AT HORTICULTURAL EXHIBITIONS.

It has often been a matter of surprise to me, that of the numerous local horticultural societies so few afford much encouragement to bee-keepers. It seems to me that by offering prizes both for honey and for hives, a very important feature of interest may be added to the operations of these societies. By liberal prizes, of course I mean liberal in comparison with the schedule of prizes generally. I often hear complaints made by visitors to local flower shows that they see nothing new; there are the same tents arranged in the same manner, and, to the ordinary observer, filled with the same plants time after time. Of course to those who are real horticulturists by practice or in taste, the truth of this remark would not apply. These can see real objects of interest in every exhibition. But I imagine it is to the ordinary non-scientific visitors that the executive of the societies must look for remunerative receipts, and therefore it is highly important that they and their tastes should be catered for. Hence, the recognised necessity for good bands of music; and the importance, where obtainable, of picturesque parks or pleasure grounds, towards accomplishing the object of rendering these meetings pecuniarily successful.

I was for many years connected with a local society which afforded some small encouragement to apiarians, and I am quite sure, from actual observation, that the interest which attached to the show of honey and of living bees in glass hives was beyond that manifested in any other department of the exhibition. Having been requested by some members of a rather young society to aid them by my advice as to the best mode of encouraging competition in honey, and I believe also in hives, I proceed to do so with no small diffidence, as the advice which may be applicable to some places may be totally unsuitable for others. The following remarks, therefore, are applicable to the case of a single society, which I will take for granted possesses a tolerably numerous list of regular members, and can also calculate on the attendance of a goodly number of visitors on field days. First, there should be a prize offered for the produce of a single colony of bees during the current season, quantity and quality to be taken into consideration. A clause is usually inserted, such as, "Without destroying the bees," but this I think may be omitted where quality bears an important part in the competition. This prize I would fix as high as possible, and I would give second and third prizes for the next best specimens.

Some societies offer separate prizes for the largest quantity taken from a hive, and also for the best glass or box. This in my opinion only leads to confusion and dispute. When a handsome glass of honey is exhibited which does not exactly come within the class of first, second, or third, as to quantity and quality combined, an extra prize can be judiciously given. It has also seemed to me very unfair to an exhibitor of a plain wooden box of perhaps 30 lbs. weight, to be beaten by one who sends a prettily filled bell-glass of some 15 lbs. or 20 lbs. weight. I have, however, seen this happen more than once. On the other hand, it will not do to be guided by considerations as to the largest quantity only, as I have known a first prize awarded to a very heavy box, which on being turned up revealed the fact

that the greater portion of the central combs was filled with sealed brood, the presence of which was not suspected from an examination of the contents from the back window. Then, in addition to prizes offered for honey, I would recommend, where practicable, that more or less frequently prizes be also offered for bee hives and their appurtenances.

A very important feature in these exhibitions is a glass observatory hive stocked with living bees, which are usually confined with ample ventilation. As this is always attended with considerable expense and some loss or risk of loss to the exhibitor, encouragement in the way of an extra prize should always be awarded. I have known large crowds congregate round one of these hives, desirous perhaps of seeing the queen, or of learning more about bees than they knew previously, so as to keep the attendant closely engaged for the whole day. It is desirable that a free pass should be given to the owner, either for himself or for some other attendant, as careful supervision to prevent accidents and to supply information is desirable. During the visit of the Bath and West of England Show to Exeter in 1863, Messrs. Neighbour, aided by the late Mr. Woodbury, had observatory hives tenanted by bees which worked out through the wooden hoarding which surrounded the showyard. These were a source of great attraction to hundreds daily. A short account of this appeared in the *Journal* of June 16th, 1863. It is very seldom practicable to allow bees to have ingress and egress during the time they are being exhibited, but, if it could be managed, it would add very much to the merits and interest of the hive, by the freedom of the bees from distress and excitement consequent on the liberty thus afforded to them. A sufficiently high partition or wall, having suitable passages leading out into a part quite distinct from the place in which the horticultural exhibition is held, is all that is necessary to insure that the flying bees shall be the cause of no annoyance to the visitors.

Whatever may be determined on as to the subjects for competition or the amount of the prizes offered, it is highly important that competent judges be appointed for deciding on the merits of the specimens. It is too often left to the judges of the flower, or of the fruit, or of the vegetable departments, to judge the honey, though they may be totally unqualified for the task. I have mentioned two cases where I have known mistakes to have been made, but I have also seen others. The prize list states that the honey exhibited must have been the produce of the then present season. I have known two occasions when glasses of honey which had been shown, and which had obtained prizes one year were also shown, and rewarded by prizes the following season. A competent judge would have discovered the fraud very easily. The judge, or judges, should if possible be apirians, but should not of course be competitors at the same exhibition. If practicable, to avoid expense they should be selected from the immediate neighbourhood; but if no one at hand seems suitable, some one at a little distance might be secured by offering the payment of his travelling expenses.

I also think it highly desirable that there should be a separate class for cottage bee-keepers, as it can hardly be expected that they can compete in the matter of glasses and nicely made expensive boxes with the more wealthy; but while establishing this principle with a proportionately lower scale of prizes, I would make it optional with the cottager to enter his articles in the higher class if he liked. It is by no means unusual to see the best specimen of honey at a show contained in a common straw cap or super, and standing among the cottagers' fruit and vegetables. These remarks only apply to such societies as have a separate schedule for cottage exhibitors.

Having given the foregoing somewhat crude remarks, I should be obliged if anyone else interested in the matter of affording to apirians produce a place of higher consideration at local shows, would assist our friends of the society to which I alluded with the benefit of their advice. To the members of that society I beg to apologise for not having earlier acceded to their request.—S. BEVAN FOX.

A WARNING.—Some curious experiments have, according to the *Matin*, been made by a doctor of Montpellier to ascertain the effects of wine, brandy, and absinthe on fowls. Any doubts which may have been entertained as to the disinclination of the birds to adopt intemperate habits were speedily dispelled, for they took to dram-drinking with evident delight, and many an old cock in the chicken house proved himself quite capable of consuming his bottle a-day. It was found necessary at last to limit the allowance of wine and spirits for each bird to six cubic centimetres of alcohol, or from twelve to fifteen of wine daily. The result was they lost flesh rapidly, more especially those who drank absinthe. Two months of absinthe-drinking was found sufficient to kill the strongest cock or hen. The fowls who indulged in brandy alone lasted, however, four months and a half; while the winebibbers survived for ten months. It was not only their health which was affected by alcohol; their personal appearance underwent an extraordinary change. An immense development of cocks' crests took place. The crests, it is stated, increased to four times their original size, and assumed a hue of

unnatural brightness—probably on the same principle that the noses of confirmed drunkards become preternaturally large and red. It is doubtful whether man is justified in trying experiments in drunkenness with the dumb creation merely with the view of ascertaining how far he may himself venture to get drunk with impunity; but having proceeded thus far, he may as well go a step further, and by the introduction of the teapot into the hen-house find out whether there is any ground for the suspicion entertained in some quarters as to the innocent properties of tea. A few experiments also in "late hours" might be made with advantage at the same time. A party of carefully selected cocks and hens might be allowed to mingle in the festivities of the London season, returning to their roosts at the hour when they usually commence to cackle and crow. It would possibly be found that one week of "political réunions," concerts, balls, and crushes would be as disastrous in its effects as two months of absinthe-drinking.—(*Pall Mall Gazette*.)

PRODUCING VEGETABLE ODOURS.

AN Italian chemist, Piria, working in France in 1838, was the first to reproduce a natural aromatic principle. He prepared by certain reactions a salicylic aldehyde, which proved the same as the essential oil of Meadowsweet, the penetrating perfume of which is well known. Some years later, in 1843, M. Cahour discovered methyl-salicylic ether, and showed that it was identical with the essence of *Gaultheria procumbens*, or Winter-green. Wertheim followed with further discoveries. The thing caused considerable sensation. Since then the art has advanced, and chemists can now produce various oils artificially, as oil of Camphor, of Bitter Almonds, of Cumin, of Cinnamon, &c., without, that is, having recourse to any of the plants.

Besides the substances now referred to, various others have been produced of the ether class, in which a very good imitation of the aroma from certain fruits has been effected. These have been largely used by perfumers and confectioners. Such artificial oils appeared for the first time at the London Exhibition of 1851. One of these was pearl oil, giving an agreeable odour of Jargonelles, and used for bonbons. This was a solution of amylacetic ether in alcohol. Apple oil was made by dissolving amylvaleric ether in alcohol. The most plentiful was that of Pine-apples, which was ordinary butyric ether. Grape oil was used for giving to brandy of inferior quality the flavour of cognac. Various others might be mentioned. This synthesis of odorous principles is one of the most striking triumphs of organic chemistry. The creative faculty is still at work. M. Berthelot has been seeking to reproduce the fatty matters of the animal economy. Some progress has been made towards the artificial production of sugar; and this will doubtless, be followed up by an effort to work out the synthesis of albuminous substances.

Linnæus brought his powers of analysis and classification to bear on the subject of odours. He arranged them in seven classes, as follows:—Aromatic odours, as those of the leaves of Laurel; fragrant odours, as those of *Fleur de Lis*, *Jasmine*, &c.; ambrosial odours, as those of amber and Musk; alliaceous odours, as those of Garlic, &c.; fetid odours, as those of Orach, &c.; repulsive odours, as those of many *Solanæ*; and finally, nauseous odours. The terms used are mostly familiar in ordinary language; but they have quite a relative and conventional value. As formerly remarked, we cannot construct a scale of odours as we can a musical scale. We can only compare one odour with another from its effects on the olfactory membrane. They have not such characteristics as can be vigorously defined. Any classification of them must therefore be imperfect.—(*English Mechanic*.)

CRYSTAL PALACE.—The enterprise of the Natural History Department of the Crystal Palace appears to be unflagging. No sooner is one show past than another of equal attraction is announced. We are informed that an exhibition of great interest is now in progress, to be held from the 3rd to the 10th of August next, and which will consist of "Specimens of game and of the apparatus of sport." Full particulars will soon appear, but the object will be gathered from the following:—This exhibition, the first of its kind ever held, is designed to illustrate natural history in a most important respect—by bringing together, if possible, a collection of all the trophies, at present in private hands, from the hunting fields of all parts of the world. These trophies, collected mostly by noblemen and gentlemen, who, as true sportsmen, are pioneers of science—will, if exhibited together, whether they be prepared in lifelike form or are in rough

condition, constitute a display, not only valuable to science, but most attractive and instructive to the public.

OUR LETTER BOX.

INFLUENCE OF COCK ON HIS POSTERITY (P. M. H.).—Your question is not quite clear. If the hen, the produce of father and mother of different breeds, be mated with a cock of her own breed, it must be with one produced like herself. We believe we know your meaning. For instance, a pullet hatched between a Dorking hen and Brahma cock, and then put to a Brahma cock, will the produce show any Dorking blood? Yes, always. The appearance of it will soon be lost, but the taint or mixture remains, and will show itself in such a cross when least expected, by producing the clean white leg and fifth claw of the Dorking with an otherwise apparently pure Brahma.

VARIOUS (L. V. S.).—Your first question refers to a point that is still undecided. We cannot guess at the number of eggs. It would probably be affected by the duration of the *mésalliance*, and also by previous and after life. If the hen had been alone previously, and was in bad company for a short time only, but few eggs would be affected, and this number would be much diminished if she returned to another cock at once. In many cases a set of eggs is affected by one visit to the cock, but it is equally sure that when fowls run promiscuously, there will be unmistakable evidence in a hatching of eggs of the presence and attentions of many different cocks. We know no process by which you can make a broken new-laid egg boil as hard as a whole one. We shall attend to your hint about economy in food in an early number.

POULTRY FOOD (H. S.).—We do not like buckwheat as well as barley or oatmeal for poultry-feeding. Maize and buckwheat will make great quantities of fat, but will not induce laying. If your birds ate the eggs, they would do so without leaving any trace or sign in the shape of shell or yolk. We advise you to do away with the buckwheat, which is too oleaginous, and substitute oat or barleymeal. The latter are every way preferable, and will cause more laying. As we have no doubt your fowls are excessively fat, we recommend you to discontinue the maize for a time and confine yourself to our home-grown cereals.

COCHINS DISEASED—WEIGHT (Evergreen).—Cochins are not often attacked as you describe, but when they are the malady is difficult to cure. In the early stages before they have become enfeebled, it is well to begin with a smart dose of castor oil. The mouth and nostrils should be well washed out with cold water, and alum or vinegar. The patients should be sparingly fed on bread and ale, and have water given to them only three times per day. A camphor pill the size of a garden pea should be given two or three times per day till the discharge ceases. The weights you mention are very fair, and if as you say "all other points are good" your birds are above the average, and may fairly look to be distinguished at any show. We cannot understand prizes being given to fowls with diseased legs. Such decisions lead exhibitors to believe these disorders are unimportant. They are not guarded against nor prevented, and hence threaten to become general. From such laxity of purpose, poultry elephantiasis is becoming common among us.

CAMBRIDGE POULTRY SHOW.—We have received intimation that the late Cambridge Poultry Show was held in connection with the Cambridgeshire and Isle of Ely Agricultural Society, and that the excellent arrangements were entirely due to the gratuitous services of Mr. Charles Reed, and not, as we supposed, of a committee of management.

EXHIBITING A BROKEN-LEGGED PIGEON (Madoc).—We consider this a matter of degree. Thus, an exhibition or show pre-supposes that the birds are fit to be seen, and worthy of admiration. A Pigeon with only one leg would not be so, neither would one with a leg so badly set that it could not move without great lameness, and being pointed at as a cripple. If, however, your Pigeon only limps a little, and that little grows each day less, we think it not unfitted for exhibition.

BROOD IN SUPERS, AND BEES PERSISTING IN SWARMING (R. W.).—We do not see that you made any mistake in your early management of your bees. You did quite right in using your partially filled bell-glasses. It is sometimes very difficult to account for the reason why supers on some hives should be properly filled, while those on others are made the receptacles for brood. In your case we should say that the cause has been from your stock hives being much too small to contain all the brood that your healthy queens required space for. We have always condemned the improved hive you mention on that very ground, it is much too small; and a common cottage hive used for supering purposes is equally objectionable for the same reason. We have generally found, perhaps in nine cases out of ten, that when brood has been deposited largely in the super, that hive will throw off a swarm. The largest proportion of the brood in such supers is usually drone brood. When swarms are united they should, if possible, be those that have issued on the same day; and you would have acted more judiciously if you had joined the two second swarms together, instead of uniting a second to a first with an interval of a week or nine days. When it is desirable to unite swarms after such an interval, it is necessary to slightly fumigate both lots of bees and sprinkle well with sugared water, reversing the hive containing the first swarm for that purpose. While so reversed, the second lot may be dashed right down among the others so as to ensure as rapid a commingling as possible. The hive must then be turned over gently in the direction from front to back on to its floor board, two or three wedges or sticks having been placed thereon, which must be gradually withdrawn when the bees begin to settle inside. But, however done, there is some risk of fighting and loss attending it. There is seldom any fighting when two swarms of the current day are joined together. It is hardly likely that your bees will do much more in the supers.

DRIVING BEES (L. C.).—Decidedly we would recommend you to wait till the spring, and drive the bees out as you propose, only we would make a swarm of the driven bees early in May, putting the swarm in the old stock's place. The stock itself, after the removal of the bees, we would put in the place of some other strong stock. Then, at the end of three weeks, you would find the hive ready for manipulation. This, we think, you would find the most satisfactory plan, although about the middle of September you would find little, if any, brood in the hive: but, perhaps, the honey would annoy you. We use nothing but the smoke of the brown paper itself, and find it fully sufficient for all purposes short of actually stupefying the bees; but we carefully avoid stupefying them, as being unnecessary, cruel, and filthy.

ERADICATING LARVE OF WAX-MOTH (R. A. S.).—There is no effectual method of getting rid of the pest in your case except by cutting out and melting up the combs. If the insects have made such a head as you state, the strongest colony of bees must succumb. To prevent the moth getting in

under the adapting-board, fix a thin one, clamped at the edges, to the top of the straw hive with a round rim of soft putty at a little distance from the central hole, press it well but gradually down, and let it remain as a fixture. You can, if you please, use a loose adapting-board on the top of this one when you put on your super.

METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		A.M.				IN THE DAY.					Rain.
1872. July	Barometer at 39° and Sea and Land.	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Temperature.		Radiation Temperature			
		Dry.	Wet.			Max.	Min.	In sun.	On grass		
We. 3	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
Th. 4	30.204	66.7	57.3	N.W.	61.9	77.6	48.8	129.5	48.0	—	
Fri. 5	30.236	67.7	60.8	W.	62.8	82.6	53.1	130.0	51.5	—	
Sat. 6	30.149	73.6	64.4	S.W.	64.7	85.1	58.1	128.1	55.8	—	
Sun. 7	29.963	73.7	63.0	N.W.	65.2	85.2	54.1	128.8	53.4	0.230	
Mo. 8	29.763	75.2	60.9	S.E.	64.9	84.2	59.3	129.8	58.4	—	
Tu. 9	29.760	62.5	57.9	W.	65.3	71.8	60.3	107.3	60.3	0.050	
	29.852	59.6	58.1	S.	63.3	71.1	53.8	116.1	52.6	0.090	
Means	29.990	68.4	60.3		64.0	79.7	55.4	122.7	54.3	0.370	

REMARKS.

3rd.—Fine summer day, rather cloudy between 7 and 8 p.m., but only for a short time.

4th.—A very fine day, warmer than yesterday, rather thick in the evening, and scarce any movement in the air.

5th.—Rather thick in the morning, but a splendid day, though rather too hot. Brilliant starlit night.

6th.—Very fine and very warm morning; thunderstorm commencing about 1.40 p.m. with heavy rain and very dark, but fine after.

7th.—A very fine day, though looking rather stormlike between 5 and 6 p.m., and a few drops of rain fell. Red and white aurora between 10.30 and 11.30 p.m.

8th.—Cooler and rather dull in the morning, and partially so all day, though no rain fell.

9th.—Rainy and rainlike in morning, and showery till the latter part of the afternoon, then bright and fine evening.

Temperature (A.M.) same as week ending on 18th of June. Max. in shade a trifle higher, and min. 3° higher; underground 6° higher, but the sun max. nearly the same, thus showing that the difference was caused rather by general warmth than by the influence of hot sun.—G. J. SYMONS.

COVENT GARDEN MARKET.—JULY 10.

The late driving weather has rapidly hastened the ripening of bush fruit, so that we have had a good trade doing in small fruit, and, as usual at this season, a great quantity is taken up for the northern markets. Rough goods are in fair request. French fruit is liberally supplied, and comprises the usual kinds at this season.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	½ sieve	3 0 to 0 0	Mulberries.....	½ lb.	0 0 to 0 0
Apricots.....	doz.	3 0 3 0	Nectarines.....	doz.	8 0 15 0
Cherries.....	per lb.	0 6 1 0	Oranges.....	£100	8 0 12 0
Chestnuts.....	bushel	0 0 0 0	Peaches.....	doz.	10 0 24 0
Currants.....	½ sieve	5 0 6 0	Pears, kitchen.....	doz.	0 0 0 0
Black.....	do.	0 0 0 0	dessert.....	doz.	0 0 0 0
Figs.....	doz.	4 0 8 0	Pine Apples.....	lb.	5 0 3 0
Filets.....	do.	0 0 0 0	Plums.....	½ sieve	0 0 0 0
Cob.....	lb.	0 6 1 0	Quinces.....	doz.	0 0 0 0
Gooseberries.....	quart	0 6 0 9	Raspberries.....	lb.	0 4 0 6
Grapes, hothouse....	lb.	3 0 7 0	Strawberries.....	½ lb.	1 0 3 0
Lemons.....	£100	8 0 14 0	Walnuts.....	bushel	10 25 0 0
Melons.....	each	3 0 8 0	ditto.....	£100	1 0 2 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	doz.	4 0 to 6 0	Mushrooms.....	pottle	3 0 to 5 0
Asparagus.....	£100	4 0 8 0	Mustard & Cress.....	punnet	0 2 0 0
Beans, Kidney.....	per 100	1 0 2 0	Onions.....	bunch	0 4 0 0
Broad.....	bushel	6 0 0 0	pickling.....	quart	0 6 0 0
Beet, Red.....	doz.	1 0 3 0	Parsley per doz. bunches	3 0 4 0	
Broccoli.....	bundle	0 9 1 6	Parsnips.....	doz.	0 9 1 0
Cabbage.....	doz.	1 0 1 6	Peas.....	quart	1 0 2 0
Capsicums.....	£100	0 0 0 0	Potatoes.....	bushel	4 0 6 0
Carrots.....	bunch	0 6 0 0	Kidney.....	do.	4 0 8 0
Cardiflower.....	doz.	2 0 4 0	New.....	½ lb.	0 2 0 0
Celery.....	bundle	1 6 2 0	Radishes.....	bunches	0 6 1 0
Coleworts, doz. bunches	3 0 3 0		Rhubarb.....	bundle	0 3 0 0
Cucumbers.....each	0 6 1 0		Salsafy.....	£100	0 9 1 0
pickling.....	doz.	0 0 0 0	Savoy.....	doz.	0 0 0 0
Endive.....	doz.	2 0 0 0	Scorzoneria.....	£100	0 9 1 0
Fennel.....	bunch	0 3 0 0	Sea-kale.....	basket	0 0 0 0
Garlic.....	lb.	0 3 0 0	Shallots.....	lb.	0 4 0 0
Herbs.....	bunch	0 8 0 0	Spinach.....	bushel	3 0 4 0
Horseradish.....	bundle	5 0 7 0	Tomatoes.....	doz.	2 0 4 0
Leeks.....	bunch	0 0 2 0	Turnips.....	bunch	0 3 0 0
Lettuce.....	doz.	0 9 1 0	Vegetable Marrows.....	doz.	2 0 4 0

POULTRY MARKET.—JULY 10.

THERE have been the usual accompaniments of very hot weather. Some lots have sold very well, some have brought bad accounts. Taken as a whole, prices have been higher than we expected, and higher than they usually are at this season.

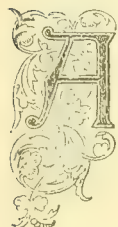
	s. d.	s. d.		s. d.	s. d.
Large Fowls.....	4 0 to 4 6		Hares.....	0 0 to 0 0	
Smaller ditto.....	3 0 3 6		Rabbits.....	2 6 0 6	
Chickens.....	2 6 3 0		Wild ditto.....	6 9 0 6	
Geese.....	6 0 6 6		Pigeons.....	0 9 0 10	
Ducklings.....	3 6 4 0		Pheasants.....	0 0 0 0	
Guinea Fowls.....	0 0 0 0		Partridges.....	0 0 0 0	

WEEKLY CALENDAR.

Day of Month.	Day of Week.	JULY 18—24, 1872.	Average Temperature near London.			Rain in 43 years.	Sun Rises.		Sun Sets.	Moon Rises.		Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.		m.	h.		m.	h.				
18	Th	Crewe and Cleckheaton Horticultural Shows. 8 SUNDAY AFTER TRINITY.	74.7	50.2	62.5	21	6	44	6	44	af 6	13	af 1	5 57	200
19	F		73.2	49.9	61.1	22	7	4	5	8	54	7	6	2	201
20	S		73.2	50.2	61.7	23	8	4	3	8	43	8	13	3	202
21	Sun		74.0	50.8	62.4	19	9	4	2	8	18	9	16	6	203
22	M		72.2	51.4	61.8	24	11	4	0	8	47	9	17	6	204
23	Tu	Spalding Horticultural Show opens.	74.0	51.4	62.7	21	12	4	59	7	7	10	18	6	205
24	W		72.6	51.7	62.1	14	13	4	57	7	25	10	19	6	206

From observations taken near London during forty-three years, the average day temperature of the week is 73.4°; and its night temperature 50.8°. The greatest heat was 93°, on the 23rd and 24th, 1863; and the lowest cold 32°, on the 23rd, 1863. The greatest fall of rain was 1.48 inch.

THE HAPPINESS OF FRUIT TREES.



TRUE gentleman is one who, by a pleasing refinement of manner indicative of high breeding, whether innate or acquired, diffuses happiness around him. Most gardeners deserve this honourable title, for they are always studying to make their plants happy. Old Adam in the play was a more finished gentleman than either Oliver or Orlando; and although Shakespeare describes him as one of the antique world, yet I would fain

hope many a hand made horny by honest labour still belongs to Nature's gentlemen. Now, the manager of every orchard house must act like a gentleman by his trees; he must treat them as though they had feelings, consult their welfare rather than his own, and, in a word, do all he can to make them happy. I use that adjective advisedly; for are not trees capable of happiness? Are they not susceptible of love? Are they not extremely sensitive to unkindness and neglect? Is it not possible to make them wretched? I much like those epithets of the Mantuan bard, *felix, læta, ridens*—i.e., happy, joyful, laughing, as applied to trees, or corn, or flowers. As, for instance—

"Exit ad cælum ramis felicibus arbor."

And again—

"Quid faciat lætas segetes?"

And once more—

"Mixtaque ridenti Colocasia fundet Acantho."

Cognate to this is the language of Holy Writ:—"The valleys are covered over with corn; they shout for joy, they also sing." Mr. Rivers also strikes the same chord, where, on the 165th page of his "Orchard House," tenth edition, he says, "The silvery covering of the Peach's blossom bud, the beauty of its fully-developed flowers, how fresh and happy they always look!" I claim his venerable authority for my assertion that trees, and buds, and blossoms may be happy, and I will add that there is a reflex benefit. A tree made happy by loving care imparts happiness also to its cultivator, and the reverse of that is likewise true, for I shall not readily forget the woe-begone visage wherewith a neighbour of mine the other day submitted to my scrutinising gaze his most miserable trees.

With your leave I will just furnish your readers with a few receipts for making Peach trees happy.

First, Prepare a fit station for them, having, if possible, a south aspect. It will be well, "*ante debita quam sulcis committas semina, quamque invite properes anni spem credere terræ*," to provide for their hospitable reception. Let me suppose that you intend covering the back wall of your lean-to house with oblique cordons *à la Bréhaut*—for that is what I recommend—let a trench be excavated two and half spits deep, and at least a couple of yards wide; see that it is well drained, pave it with rubble, then fill-in with a stiff calcareous soil fresh from a pasture, and abstain from defiling its virgin purity with manure.

No. 590.—VOL. XXIII., NEW SERIES.

Secondly, Select a tree that already looks happy in its nursery, two years old from the graft, provided with plenty of healthy spurs—for there cannot be happiness without health—plant as soon as possible; for a tree out of the ground is like a fish out of water. Spread-out the roots carefully in the shape of a fan, and tread the soil firmly round the base of the tree.

Thirdly, Make up your mind (no matter whether you object to tobacco or not) to fumigate your house promptly and thoroughly on the very first appearance of aphides. Too much attention cannot be given to this most essential point. Mr. Appleby, of Dorking, furnishes effectual fumigators, and tobacco paper so very pungent that even my man John Hankin cannot stand it, much less can the green fly. Now mind! the slightest delay in fumigating, or in applying soft soap and quassia, if you prefer it, will be fatal to the happiness of your trees and to your own peace of mind.

Fourthly, In the early part of the year make up a small hotbed in your orchard house. It is wonderful how the ammonia prevents the invasion of red spider—a pest which, if tolerated, will soon render your promising trees the reverse of happy.

Fifthly, Be careful to keep the bark of your trees free from scale insects. You may hardly see them, you may be ignorant of the harm they do, but when your fruit ripens it will look more smutty than happy if you have failed to exterminate both mealy bug and scale.

Sixthly, Make it your pastime to hunt for thrips; they prey upon the extremities of the young shoots, and are most pertinacious killers of joy.

Seventhly, Obey heedfully the directions given in the books as regards pinching. Too much pinching cannot well be conducive to happiness; if you think so, try it on your wife, and mark well the result. Do not be in too great a hurry to pinch-back. Mr. Rivers's own trees are not so severely pinched-in as his book seems to recommend. My own practice is to wait until the shoots require to be cut.

Eighthly, Apply soft water to the roots of your trees regularly. I find it a good plan to give plenty when they ask for it, and not oftener; but in very hot weather you must look out, or else the happiness of your trees will be impaired, if not entirely destroyed, by drought.

Ninthly, Keep your trees syringed daily, but never while the sun is on them, for blistering the leaves adds not to joy; but on an evening after a sultry day their leaves, refreshed by the shower, resemble so many tongues quivering with thanksgiving, they are so happy. I may just mention that the effect of ammonia in preventing red spider has emancipated me from the servile necessity of daily syringing.

Tenthly, Thin your fruit with a bold hand; an over-laden tree may seem happy, but it is not so really; its stamina is being undermined by your cupidity, and call you that gentlemanly treatment? Next year its sad looks will chide you for your cruelty. Mark my words, a few fine Peaches that show marks of culture are worth infinitely more than the whole hateful of

No. 1242.—VOL. XLVIII., OLD SERIES.

wizeden things called Peaches that you buy in Switzerland for a batz.

Eleventhly, I advise you to set traps for woodlice and earwigs, and to wage war with ants.

Twelfthly, Mulch the surface of your border with rich manure (this is no contradiction to what I said in Rule 1); then the water percolating through the interstices of the soil will convey to the roots as much nourishment as they require. To drench your trees with strong liquid manure is like dosing your friend with spirits neat, under the delusion that you are thereby making him jolly.

Lastly, See that your house is well ventilated. Could you have been happy in the black hole of Calcutta? Then think of your trees gasping for fresh air. Keep your shutters down at night. I know that some differ from me in this respect, who teach you to reserve heat by closing shutters; but as my theme is the happiness of fruit trees, on behalf of their comfort I say, Give them air.

And now I have furnished thirteen rules. I will not add more. I am well aware I have said nothing new—that would be a difficult job in these days of enlightenment—I have but tried to dress up an old matter in a new garb. It is quite possible that I have laid myself open to adverse criticism, but I am determined that no amount of censoriousness shall have the power to disconcert me, so long as I can walk through my own spacious orchard house and survey my trees (as the result of adherence to the rules I have ventured to prescribe), looking thriving and happy.—A CONSTANT READER.

THE STRAWBERRY IN 1872.

THE season of 1872 has been remarkable for a pretty general failure of the fruit crops. In this neighbourhood (Ilford) Plums, both as standards and pyramids, are a total failure; Apples and Pears are not the fourth of a crop, and Gooseberries and Red Currants are far from plentiful. Under such adverse circumstances it is some satisfaction to know that Strawberries are abundant, and the weather being highly favourable for ripening them, the quality is also good.

There is still considerable difference of opinion as to which is the best system of culture to adopt with the Strawberry. Some growers contend that it is best to destroy the old beds annually and make a fresh plantation every year; others practise a different system—they plant in autumn, and continue to pinch all runners and any flowers which may appear the following season, trusting to make up for the loss of a crop one season by gathering an abundant one in the following year. I believe that the different classes of soils have much influence as regards this difference of opinion. A clayey loam seems to be that best adapted to the requirements of this fruit, and on such soils I have seen the same beds continue in good bearing condition for many years, requiring no attention except to keep the ground free from weeds and to loosen the soil between the rows with a fork in autumn or winter, having previously dressed the beds with a liberal portion of rotten manure. In light sandy loam with a gravelly subsoil similar treatment would not insure success, and would probably end in failure. There are examples of both old and young plants at this place—the soil is light and the subsoil gravel—on the old plants, and they are only two years old, the crop is very scanty and the quality indifferent, while on the plants which were “set out” as young runners in August last year, the crop is most abundant, and the quality all that can be desired. Indeed, so unsatisfactory have been the crops from old beds with me, that I have determined to form fresh beds annually, and destroy the old ones as soon as the fruit has been gathered from them.

Before planting out it is well to see that the ground is previously well prepared by trenching it 2 feet deep, if the nature of the soil will allow of it, taking this opportunity to add to it a liberal proportion of good manure. This is placed in the trenches in two layers in the following manner:—A trench is thrown out at one end of the ground and the soil wheeled to the farther end; one layer of manure is placed at the bottom of this trench; a similar space is marked off parallel to the first trench, a spit of earth is thrown out, and the loose portion is shovelled on the top of it, another layer of manure is spread over it, and another spit and the loose earth are thrown out. I also fork up the bottom of the trench so that the ground, when the subsoil admits of it, shall be stirred to a considerable depth. The planting ought also to be done in a careful manner, as on this much of the ultimate success depends.

Whether for culture in pots or for planting out I always layer the plants in small pots which are filled with rich loam. When they are well established, which will be in a fortnight, more or less, sever them from the parent plants, and as soon afterwards as may be convenient let them be planted out. Do not on any account allow them to remain in the pots until they are root-bound. I have sometimes, when the ground has not been ready for them, shifted into larger pots rather than they should receive a check. If the ground is dry, as it frequently is at this season of the year, it ought to be flooded with water and allowed to remain twelve hours before planting.

The after-treatment should be directed to obtaining sturdy and robust plants sufficiently large to carry a good crop of fruit. If a dry period sets in give a good soaking of water at least once a week; and should the red spider (a most inveterate enemy of the Strawberry plant) appear, syringe occasionally with soot water, which will keep it in check. Stir the ground frequently with a hoe, and keep it perfectly free from weeds.

Pot culture is also extremely simple. The plants are layered in small pots $3\frac{1}{2}$ inches in diameter, inside measure; they are potted as soon as established into 6-inch pots, using four parts of good loam and one part of rotted manure. In potting, the compost ought to be pressed in quite firmly; the plants should then be removed to an airy position, fully exposed to the sun yet sheltered from furious gales; give abundant supplies of water after the roots have taken firm hold of the sides of the pots, but do not at this time give any manure water. Towards the end of September the pots will be completely filled with roots, the crowns will begin to ripen, and less water must be given to them.

At the end of October the pots should be removed under some glass protection, and, if the structure is unheated, plunged in some light material to protect them from frost. The best place to winter them in is a pit sufficiently heated to keep the frost out. From this pit they can be removed in successive batches for forcing, but they must not be placed in too strong heat at first, and the plants should be kept as near as possible to the glass, where they can have the benefit of all the air that is admitted. The most troublesome insect pest is red spider, which, however, can easily be kept under by syringing. The plants must be well supplied with water, especially after the flower-trusses appear. It is the custom with some to place the pots in saucers which are kept full of water. When this is the case they do not require so much attention, but it is a method I do not approve of, as the quality of the fruit is impaired, and the leaves and stalks of the fruit are drawn up. When the flowers are fully expanded it is time to thin them out. From six to twelve fruits will be sufficient for a 6-inch pot.

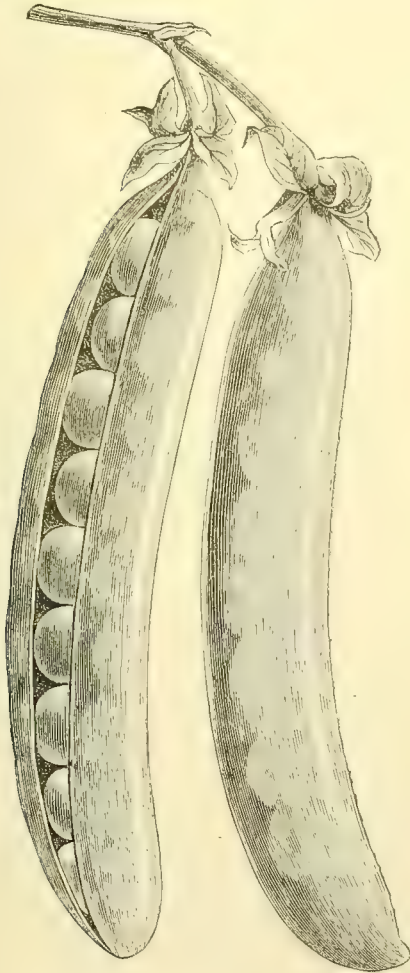
I have grown eighteen sorts this year, and all of them are distinct. I have not had any variety yet to supersede the Black Prince for earliness; it is also exceedingly fruitful, but small and rather deficient in flavour. Vicomtesse Héricart de Thury is said to be quite as early, and the fruit is larger and of better flavour, but I have not yet tried it. Through the kindness of Mr. Sage, of Ashridge, I received a supply of Keens' Seedling, a variety which has previously failed here, but I believe I never had the true sort. It is, though one of the oldest, one of the best both for forcing and out-door culture. President is next in earliness, and ripened simultaneously with Alexander II., a new variety which has done remarkably well both in pots and planted out. It bears an abundant crop of large even-sized fruit of a bright red colour throughout; the fruit is also of good flavour. British Queen and Mr. Radclyffe still hold a very high position, but as I have them here they are so much alike that it is not possible to distinguish the one from the other either in the plant or fruit. Neither of them produces such large-sized, fine-looking fruit as Dr. Hogg. This, when it succeeds, is magnificent, but in our light soil it has much degenerated; the plants are very liable to die off, and 50 per cent. of them become barren. Lucas and Premier are highly desirable varieties, they produce very large highly-coloured fruit, and are excellent exhibition varieties. Lucas is of very good flavour, a point in which Premier is deficient. La Constante is true to its name, and is a variety I should not like to dispense with. It is excellent for pot culture from its exceedingly dwarf and compact habit of growth, and for this reason it can be planted closer together than any of the other sorts; it is well adapted for small gardens.

Frogmore Late Pine is one of the best productions from the Royal Gardens, and is a most useful late variety, dark in colour, an abundant cropper, and of a rich Pine flavour. Cockscumb

is one of the best flavoured sorts with very large fruit, and one of the very best for filling the basket quickly. Black Bess was kindly sent me by Mr. Gilbert, gardener to the Marquis of Exeter. I fruited six plants in pots, and I think highly of it, but will reserve my opinion of it and likewise of Amateur until next year. All the varieties named above I can recommend to those who have not grown them. They may not all give the same satisfaction in other classes of soil that they have done here, but all are worthy of a trial.—J. DOUGLAS.

NEW PEA, DR. HOGG.

THE vast number of new Peas that have emanated from the skilful cross-breeding of Mr. Laxton, of Stamford, bid fair to supplant many of the old varieties, with the names of which we have long been familiar. The great merit of these new varieties is, that they possess qualities far superior to the old ones, with every stage of earliness. Some there are which, being wrinkled Peas, are as early as Dillistone's, and there is no form of the old classes of Peas which has not its representative among the wrinkled Marrows of Mr. Laxton's novelties.



Pea, Dr. Hogg.

One of the best of these new varieties bears the name of "Dr. Hogg." It may be described as a dwarf and early Ne Plus Ultra. No higher recommendation could be given to it than to introduce it as a competitor of Ne Plus Ultra. The plant grows about 4 feet high. In dry seasons it will not, perhaps, be taller than 3 feet, and in wet ones such as the present it will reach 5 feet. The stem is simple, and well covered with pods, which number from nine to ten. These are 4 inches long and over three-quarters of an inch wide, of a dark blue green, like those of the early Green Marrows and Ne Plus Ultra, much curved like Auvergne, and containing

nine very large Peas, which are of a deep green colour. The ripe seed is green and wrinkled.

The seed was sown on the 23rd of February, and the plants were in full bloom on the 24th of May. The pods were fit for use on the 16th of June. Or, to sum up the whole, it is a fine Ne Plus Ultra, coming in one week after Dillistone's, the earliest of all Peas, and thirteen days earlier than the old Ne Plus Ultra. This is a valuable acquisition.

ROYAL BOTANIC GARDENS, KEW.

MEMORIALS TO MR. GLADSTONE.

THE following memorial to the Premier respecting the Royal Gardens, Kew, was forwarded yesterday by the Council of the Royal Horticultural Society:—

"The Council of the Royal Horticultural Society, being convinced of the admirable manner in which the Royal Gardens at Kew have been conducted for so many years by Dr. Hooker, and of the great benefits to horticulture and botany which have resulted from his highly cultivated scientific attainments, venture to hope that Mr. Gladstone may be able to take such steps as will confirm and uphold Dr. Hooker in his present appointment, and enable him to continue his labours with satisfaction to himself and advantage to the country.

"W. W. SAUNDERS, F.R.S., Chairman."

Memorials to the same effect were sent by the Scientific, the Fruit, and the Floral Committees of the Society.

At a meeting of horticulturists and botanists, held at 41, Wellington Street, Covent Garden, on Tuesday, July 16th, for the purpose of taking into consideration the present state of affairs as regards the management of the Royal Gardens, Kew, James Bateman, Esq., F.R.S., in the chair, it was resolved that the following communications be sent to the Right Hon. W. E. Gladstone, First Lord of the Treasury:—

"To the Right Hon. W. E. GLADSTONE, M.P., First Lord of the Treasury.

"41, Wellington Street.

"SIR,—I have the honour to forward you the enclosed memorial, agreed to this day at a meeting of horticulturists and botanists, convened for the purpose of considering the present condition of affairs as regards the management of the Royal Gardens, Kew.—I have the honour to be, Sir, your most obedient servant,

"JAMES BATEMAN, Chairman."

"To the Right Hon. W. E. GLADSTONE, M.P., First Lord of the Treasury.

"We, the undersigned, being personally interested in botany and horticulture, and conscious how intimately the progress of those branches of knowledge and industry is connected with the proper administration of the Royal Garden, Kew, and of the museums and herbaria thereto belonging, venture to call your attention to the present unsatisfactory condition of affairs as regards the management of that establishment.

"We respectfully submit that the system of making one official responsible for the cultivation of the plants, and another responsible for the conduct of what repairs may be requisite in the apparatus used for heating the houses that contain them, is likely to be in the highest degree detrimental to the public interest, while the harmonious co-operation of the officials engaged, and which is so essential in such a case, can hardly be looked for under such a system.

"We beg leave respectfully to state our opinion that the full control over all details of management, of whatever kind, should be left to the Director.

"We venture to suggest that the Board of Works is not the most appropriate body to exercise supervision over such an establishment as Kew, where great scientific interests are at stake, as well as the instruction and recreation of the people.

"We would, therefore, respectfully urge upon you the expediency of placing the directorate of Kew directly under some other department of the Government. And, lastly, we would express our hope that you will be pleased to take such measures as shall in future secure that the Director of a large public establishment shall, if for no other reason than the respect due to his office, be treated with fitting consideration.—Signed, on behalf of the meeting,

"JAMES BATEMAN, F.R.S., Chairman.

"MAXWELL T. MASTERS, M.D., F.R.S., Hon. Sec.

"41, Wellington Street, W.C."

TRIAL OF BOILERS AT BIRMINGHAM—

DECISION OF THE JUDGES.

THE trial of the heating apparatus at the recent Exhibition held in the Aston Lower Grounds, did not terminate until Saturday week, and it is consequently only within the last few days

that the Judges—Mr. H. T. Hassall, Mr. Walter May, and Mr. Edward Bennett—have given their decisions; delay having been occasioned by the tedious nature of the investigations they were called upon to make. The task which these gentlemen kindly undertook at the request of the Local Committee was a very laborious one, and it will, we feel assured, be admitted by all parties concerned that they have performed it in a painstaking, able, and conscientious manner. As we have previously remarked, the scheme issued by the Local Committee on their own responsibility was necessarily to a considerable extent experimental, as they had no experience to guide them, the Royal Horticultural Society having hitherto refrained from offering prizes for horticultural appliances. Such being the case, they did not prepare any definite plan by which the competitions were to be conducted, but accorded a large measure of discretion to the Judges, who have exercised it in a very satisfactory manner. The *modus operandi* adopted by them may be thus stated:—1000 feet of 4-inch piping were ranged in four sections at an elevation of several feet from the ground, and connected at one end by transverse piping, to which branches were attached. Parallel with this transverse piping were the various boilers, each of which in its turn was connected by a branch with the transverse piping; but in those cases where the capacity of a boiler was set down in the certificate of entry as being only 500 feet, one-half the entire quantity of piping was shut off by means of a valve. Access to the heated water was gained by the insertion, at the outer end of each range of piping, of vertical wrought-iron tubes, down which highly sensitive "standard" thermometers, supplied by Messrs. Joseph Davis & Co., Polytechnic Institution, Regent Street, London, were passed. The regulations, which have been already published, were printed and circulated among the competitors and their assistants.

The following are the awards:—

The gold medal to Messrs. Hartley & Sugden, of the Atlas Works, Halifax, for their welded wrought-iron chambered saddle boiler, with extended water way.

A silver medal to Mr. Benjamin Harlow, Macclesfield, Cheshire, for the best tubular boiler and connections in competition.

A silver medal to Mr. Benjamin Harlow for his improvement in jointing hot-water pipes.

A silver medal to Messrs. Jones & Rowe, Worcester, for the Witley Court Boiler, as the best on exhibition without trial.

A bronze medal to Mr. Frederick John Mee, Liverpool, for combination of hollow wrought-iron bars, dead plate, and back for attachment to existing saddle boilers.

A bronze medal to Mr. S. Deard, Harlow, Essex, for his small Amateur's Heating Apparatus.

In the communication setting forth these decisions the Judges observe that the trials of the boilers were conducted under great disadvantages as regards weather—a circumstance which has rendered it very difficult to arrive at satisfactory conclusions; but as some of the boilers were tried more than once, all have been dealt justly by. They consider that in any future trials it will be necessary to house the pipes in some manner to obviate the difficulties caused by variations of temperature and wet weather. They all recommend that the conditions to be complied with by exhibitors should be more precisely and fully laid down; and they add, in conclusion, that if any of the experience they have gained will be of any service to the Society, they will, with pleasure, place the same at its disposal.

ROYAL HORTICULTURAL SOCIETY.

JULY 17TH.

ALTHOUGH the Show on this occasion was very small, as might be expected at this season when the energies of exhibitors are almost exhausted by a ceaseless round of exhibitions, there was, nevertheless, much that was very good, especially the Carnations and Picotees.

Of six Liliums in pots the only exhibitor in the amateurs' class was that enthusiastic Lily-cultivator G. F. Wilson, Esq., of Weybridge Heath, who, being a member of Council, could not take the first prize which was awarded him. The kinds were:—A fine variety of *L. longiflorum*, called by Mr. Max Leichtlin *L. longiflorum* Wilsoni, having pure white flowers upwards of 6 inches in length, and not quite so much in diameter at the mouth; *japonicum* Takesima, also white; *L. tigrinum* sinensis, the old Tiger Lily grown under glass; *L. tigrinum* splendens as sent out by M. Van Houtte, with much broader segments, and more regularly reflexed than the ordinary form—what has hitherto been exhibited as *splendens* is believed to be *Fortunei*;—*tigrinum* flore-pleno, and *Fortunei*, both in bud. In the open class Mr. Bull, of Chelsea, was the only exhibitor, showing excellent pots of *L. auratum*, *L. Thunbergianum*, *L. longiflorum*, and *L. speciosum* rubrum, together with *L. speciosum* punctatum and *L. croceum*. For these a first prize was awarded.

A class for six Gesneraceous plants, exclusive of Gloxinias and

Achimenes, came next. Here the only exhibitor was Mr. Bull, who had a first prize for *Cyrtodeira chontalensis*, with pale lilac flowers and ornamental brown and green leaves; *G. amabilis*, *Sinningia purpurea*, *Tapeinotis Carolinæ*, *Biglandularia conspicua*, pale yellow; and *Eucodonia nageloides* lilacinella. Mr. Bull likewise exhibited some new *Gesneras*, and *Brownea* princeps, with drooping, semi-translucent, pale yellowish green leaves.

For twelve Carnations Mr. Turner, Slough, was far in the front with splendid blooms of Ajax, Campanini, King John, Guardsman, Dr. Foster, Rainbow, Isaac Wilkinson, Mrs. F. Burnaby, Dreadnought, Ascendent, Mars, and Lorenzo. Mr. Norman, 98, Crescent Road, Plumstead, was second; and Mr. Kirtland, Albion Nursery, Stoke Newington, third. Mr. Ware, Hale Farm Nursery, Tottenham; and Mr. Pizzey, gardener to Sir E. Perry, Bart., Fulmer, also exhibited in this class. The latter took the first prize in the Metropolitan Floral Society's competition, and Mr. Norman the second; and the same exhibitors took the same relative positions for Picotees.

The best twelve Picotees in the Royal Horticultural Society's class came from Mr. Turner, and, singular to say, the whole of them were seedlings not in commerce. They were for size, form, and edging, the most perfect lot we remember having seen. Their names were Mrs. Hornby, light red-edged; Mrs. Standish, heavy scarlet-edged; Cynthia, light purple-edged; Mrs. Fordham, medium scarlet-edged; Princess of Wales, superb, heavy red-edged; Edith Dombrain, heavy rose-edged; Mabel, fine, heavy purple-edged; Mrs. Allercroft, light rose-edged; Mrs. Keynes, medium red-edged; Ethel, exquisite, medium rose-edged; Jessie, medium purple-edged; and Juliana, heavy scarlet-edged, vivid in colour. Mr. Norman was second with a very good stand, and Mr. Pizzey third. In the miscellaneous class Mr. Turner took an extra prize for a splendid stand of self-coloured Carnations: New Purple, Maiden's Blush, Géant des Batailles, and Telegram were remarkably effective.

Of six Phloxes only two groups were shown, the best coming from Messrs. Downie, Laird, & Laing, Stanstead Park Nursery. The kinds were Eclair, bright scarlet, Madame Marie Saison, Lady Keith Murray, Queen of Whites, Dr. Masters, fine magenta scarlet, and Venus. The second prize went to Mr. Ware.

Only one group of Hardy Perennials in pots was shown, and that came from Mr. Parker, Exotic Nursery, Tooting; it contained, among others, excellent specimens of *Liatris spicata*, and *Funkia elegans* viridis marginata. Mr. Parker also contributed a mixed group in the miscellaneous class, taking an extra prize. In this, besides cut spikes of *Salvia bracteata*, *Lytirum Salicaria* roseum superbum, fine rosy purple, *Liatris spicata*, and *Lathyrus latifolius* splendens, a fine form of the Everlasting Pea, there were *Caladiums*, and other fine-foliaged plants.

Foremost among the miscellaneous subjects were eighteen boxes of splendid cut blooms of Roses furnished by Mr. Turner, forming an exhibition of themselves, which well deserved the extra prize awarded. R. Webb, Esq., of Calcot, had a similar award for one hundred blooms of *Maréchal Niel*, of that rich golden colour which is so much admired. Messrs. Jackman, of Woking, exhibited fine specimens of *Clematis Rubella*, *Alexandra*, and others; also a stand of cut blooms, in which *Magnifica* and *Jackmanni* were conspicuous. To the effect of these hybrid *Clematises* we shall probably refer hereafter. Mr. Ware sent flowering specimens of *Yuccas*; Mr. Turner, double-flowered *Pelargoniums*, including *Sapeur Pompier*, a fine scarlet, *C. Glym*, of the same colour but dwarfed, *Madame Hock*, rose, and *Rose Tom Thumb*, also a dwarf variety. Mr. Toomer, gardener to W. Knowles, Esq., Ribblesdale, Streatham, had an extra prize for two magnificent pot Vines of Foster's White Seedling, each bearing about fourteen fine bunches.

Messrs. Carter & Co., of High Holborn, offered prizes for the best three brace of Cucumbers, and the best four dishes of Lettuce, the latter to include Carter's Giant White and All the Year Round. Mr. D. Pizzey, gardener to Sir E. Perry, was first with *Fulmer Favourite*, white-spine, *Marquis of Lorne*, and *Fulmer Hero* Cucumbers, these, especially the second-named, being excellent specimens, together with well-grown Lettuces of the *Paris White Cos*, *Ne Plus Ultra*, and the specified kinds; Mr. Osman, gardener to the South Metropolitan District Schools, was second. Mr. Toomer sent some very fine fruiting plants of Tomatoes in pots.

FRUIT COMMITTEE.—G. F. Wilson, Esq., F.R.S., in the chair. Mr. Linden, of Brussels, exhibited a new Pine called *Mordilona*, very much resembling the Queen in the fruit, and with the foliage of the Smooth-leaved Cayenne. It is reported to come from the cold regions of Columbia, at an altitude of 6000 feet above the level of the sea, and when well grown to attain the weight of 5 kilogrammes. The specimen exhibited was grown in England, but being evidently not produced in its best condition, the Committee requested to have it again. The flavour was very sweet. Mr. Miller, of Workshop Manor, sent a specimen of Providence Pine, which received a cultural commendation. Mr. J. S. Stannard, gardener to J. M. Green, Esq., Stradishall

Place, Newmarket, sent two Scarlet-fleshed Melons, The Claimant and Suffolk Gem. The latter was very watery and deficient in flavour, and the former also very deficient in flavour. Messrs. Wood & Ingram, of Huntingdon, also sent a hybrid Melon of the Cabul strain, very inferior in flavour. Mr. W. Tillery, of Welbeck Gardens, sent a dish of *Violette Hâtive* Nectarines of great beauty, which received a cultural commendation. Mr. J. Lane, Pyrgo Park Gardens, Romford, sent four dishes of Peaches.

Mr. Douglas, of Loxford Hall Gardens, Ilford, sent a bunch of a seedling Grape raised from the Black Hamburgh crossed with White Frontignan. The bunch is like that of Frontignan, the berries large, much more so than in the Frontignan, the flavour was very rich, and with a delicate flavour of the Frontignan. The Committee requested it to be sent again. Mr. Newman, of The Elms, Harlington, sent a punnet of large Raspberries, selected from the Northumberland Fill-basket. They were very fine, but the flavour deficient, no doubt owing to the great quantity of rain that has recently fallen.

Mr. W. Clegg, Boston, Lincolnshire, sent a new variety of Cos Lettuce. Mr. M. Newman sent a bunch of White Tripoli Onion grown from seed saved in England. They were considered of excellent quality. Mr. Miles, Wycombe Abbey Gardens, sent two dishes of very large and fine White Tripoli Onion. Mr. Evershed, Munstead Gardens, Godalming, sent a dish of Munstead Marrow Peas, which has been proved at the gardens as being a good selection of *Ne Plus Ultra*. Mr. Osman, gardener to the South Metropolitan District Schools, sent dishes of Laxton's Supreme Peas and Broad Windsor Beans.

FLORAL COMMITTEE.—Dr. Denny in the chair. Mr. Denning, gardener to Lord Londesborough, sent a splendid collection of Orchids, and received cultural commendations for *Masdevallia Harryana*, with five beautifully-coloured flowers, and we believe larger than ever before exhibited; for a grand specimen of *Anguloa Clowesii*, with a dozen great Tulip-like blooms; and for *Epidendrum vitellinum majus* with two spikes bearing respectively seventeen and twenty-five flowers, much larger than usually seen. In the same collection were fine *Stanhopeas*, *Thunia alba*, and other Orchids.

To the Carnations and Picotees from Mr. Turner, of Slough, we have already referred. The following were awarded first-class certificates—viz., Carnations Mrs. F. Burnaby, Isaac Wilkinson, Campanini, and Superb; Picotees Ethel, Norfolk Beauty, Juliana, J. B. Bryant, Mrs. Hornby, Edith Dombrian, and Princess of Wales. Mr. Wilson's Lilies have likewise been already alluded to; *Lilium Takesima japonicum*, *L. tigrinum splendens*, and *L. Leichtlinii majus* had first-class certificates. M. Thibaut aîné, Paris, sent a collection of Carnations and Picotees, some of which were novel in colour, but all much faded. Mr. King, gardener to Rev. J. Wiggett, Binfield, sent several seedling Pelargoniums, one of which, a Nosegay called Pink Pearl, pink, and white at the base of the two upper petals, had a first-class certificate. Mr. Douglas, gardener to F. Whitbourn, Esq., Loxford Hall, Ilford, sent a plant from the diamond fields of South Africa, the name of which could not at once be determined.

Mr. Wilson, gardener to W. Marshall, Esq., Enfield, exhibited a head of a *Hæmanthus* with red flowers, and a by-no-means ornamental *Masdevallia*; Mr. Bull, Crinum McKenii, with large pale blush flowers; and Mr. Ware several varieties of *Semprevivum Youngianum*, and a crimson purple-leaved *Phytolacca* as useful half-hardy bedding plants.

Mr. Turner sent a large-flowered scarlet Pelargonium, called Windsor Castle, fine also in colour, and Mrs. Quilter, with large dense trusses of pink flowers—this had a first-class certificate. From Mr. Norman came seedling Picotees; from Messrs. Rolleson, Tooting, *Hyacinthus princeps*, with large, bell-shaped, drooping white flowers; from Messrs. Barr & Sugden, Covent Garden, a collection of cut flowers of various Lilies; and from Messrs. J. & C. Lee a collection of very fine Balsams. *Allamanda Hendersoni* and *A. Wardleana*, so often claimed to be distinct, were exhibited from Chiswick, where they were grown under similar conditions, and the Committee came to the conclusion that the so-called two are identical. Mr. Gilbert, gardener to the Marquis of Exeter, Burghley, exhibited two of his useful hand-lights; and Mr. Macfarlane, 41, Oxford Street, Glasgow, a sulphurator and powder-distributor, which, however, seems to be rather complicated.

CRYSTAL PALACE ROSE SHOW.

JULY 13TH.

THIS Show was originally to be held on the 22nd of last month, but partly from the unfavourable weather which prevailed up to that date, and partly, we surmise, from a desire not to clash with the Royal Horticultural Society's Birmingham Show, as well as others, it was postponed till Saturday last. Meantime came days of burning sun which so quickly rob the Rose of her virgin glories, culminating in a severe thunderstorm on the evening of the 11th. An alteration of date is no doubt detrimental to the success of any show, and after the heavy beating rain there were

not wanting those who shook their heads and predicted the Rose Show at the Palace would be a failure. The event proved they were wrong—the Roses were good, and there were so many of them that they filled 800 feet of double tabling; and here we may remark that Mr. Wilkinson had very judiciously introduced all along the centre, between the two lines of staging, a variety of plants, so as to relieve by their foliage the flatness of outline as well as the excess of colour which the Roses alone would have presented.

Class 1, for seventy-two single trusses, was the chosen battlefield of the nurserymen, and the honours were stoutly contested by no less than ten well-tried champions. Mr. Cant, of Colchester, took the first place with splendid trusses of *Duchesse de Caylus*, *Exposition de Brie*, *Victor Verdier*, *Comtesse d'Oxford*, *Ferdinand de Lesseps*, *Alfred Colomb*, *Maréchal Niel*, *Jean Lambert*, *Maurice Bernardin*, *Sénateur Vaisse*, *Prince Camille de Rohan*, and *Pierre Notting*. Mr. Keynes, of Salisbury, came in second with a very fine collection, in which we particularly noticed *Louis Peyronny*, *Mlle. Marie Rady*, *Elie Morel*, *Paul Neron*, *Victor Verdier*, and *Mlle. Eugénie Verdier*. The remaining prizes went to Mr. C. Turner, Slough, Mr. J. Cranston, Hereford, and Messrs. Paul & Son, Cheshunt, all having exhibitions of great merit. Messrs. Veitch, Mitchell, of Pitdown, Francis, of Hertford, and Cattell, of Westerham, also exhibited.

The next class in the nurserymen's division also gave rise to a severe struggle, which ended in Mr. Turner proving victorious, Mr. Keynes coming in second, with Mr. Cant and Messrs. Paul and Son third and fourth. The varieties already named and many others were excellently represented in the different stands; we may cite *La France*, *Lælia*, *Queen Victoria*, *Marquise de Castellane*, *Xavier Olibo*, *Monsieur Woolfield*, *America*, *Souvenir de Malmaison*, and *Climbing Devoniensis*.

In Class 3, for three trusses of twenty-four varieties, the lists were again well filled, Messrs. Keynes, Turner, Paul & Son, and Cant taking off the honours, but not without their right to them being ably disputed by Messrs. Cranston, Veitch, Cant, and others. *Gloire de Dijon*, *Alfred Colomb*, *Marie Baumann*, *Louis Van Houtte*, *Baroness Rothschild*, *Duc de Rohan*, *Comtesse d'Oxford*, *Victor Verdier*, *Léopold I.*, *Marquise de Castellane*, *America*, and *Sénateur Vaisse* were a few of the most conspicuous.

For twenty-four single trusses shown in Class 4, the awards went to Mr. G. Prince, Oxford; Mr. J. Walker, Thame; Mr. G. Cooling, Bath; and Mr. Walters, Mount Radford Nursery, Exeter.

In the amateurs' classes there were some splendid stands, especially those from Mr. T. Draycott, gardener to T. T. Paget, Esq., M.P., Humberstone, Leicester, who was first for forty-eight; and the Rev. J. M. Camm, Monkton Wyld, Charmouth, who was first both for thirty-six and twenty-four trusses. The Rev. G. Arkwright, Pencombe Rectory, Bromyard, was second for forty-eight, and fourth for thirty-six; T. Laxton, Esq., Stamford, third for forty-eight; and Mr. Ingle, gardener to Mrs. Round, Colchester, fourth. R. N. G. Baker, Esq., Heavitree, Devon, was second for thirty-six; Mr. Stoddard, Wivenhoe Park Gardens, third for the same number, and second for twenty-four. The remaining prizetakers were Messrs. Skinner & May, of Stisted; and for twelve Messrs. Catley, Tranter, Soder, and Finch.

We now come to the open classes. For twelve trusses of any new Rose of 1871, the first prize was withheld; the second went to Mr. Keynes for Capt. Lamuret, Messrs. Paul & Son showing Prince of Wales, blush. The latter firm were first for a collection of twenty-four Roses of 1870 and 1871, also for the best twelve blooms of any one variety, showing Alfred Colomb. Baroness Rothschild from Messrs. Veitch and Mr. Cooling came next, equal second prizes being given; and equal thirds went to Mr. Cant for the same kind, and to Mr. Turner for *Maréchal Niel*.

Yellow Roses were very numerous shown, but many of them were not so fine as we have seen them; the best came from Messrs. Paul & Son, Cant, and Prince.

For the best vase or épergne of Roses suitable for the dinner-table, the first prize went to Miss Blair, 50, Upper Bedford Row; Messrs. Cutbush & Son, Highgate, and Mr. Soder, gardener to O. Hanbury, Esq., being equal second.

Of dinner-table decorations there was a large display, many of them with plants let through the tables, and, as usual, several quite overloaded with flowers. In the open class Mr. J. Hudson, Champion Hill, Camberwell, was first, and Mr. W. L. Buxton, St. Mary's Cray, second. The latter was first in the amateurs' class, Mr. W. Soder and Mr. Hudson being equal second.

Miscellaneous exhibitions were few. Mr. Croucher, gardener to J. Peacock, Esq., Sudbury House, Hammersmith, exhibited a large collection of Cactus, *Echinocactus*, *Cereus*, *Opuntia*, and similar plants, many of them very curious and rare. From Messrs. Downie & Co., Stanstead Park Nurseries, Forest Hill, and Mr. J. H. Ley, Lansdowne Road, Croydon, came miscellaneous groups of plants; from Mr. C. Perry, The Cedars, Castle Bromwich, fine trusses of *Verbenas*, including several seedlings, of which Lady Bradford and Crystal Palace had first-class cer-

tificates; from Mr. Turner, Slough, fine Carnations and Picotees—of the latter Edith Dombain, Ethel, and Mrs. Allcroft had first-class certificates;—and Mr. Norman, Plumstead, and Mr. Hooper, Widcombe, Bath, had similar exhibitions. Messrs. Downie & Co. had a first-class certificate for Silver Tricolor Pelargonium Stanstead Pride; Messrs. Paul & Son one for Rose S. Reynolds Hole, noticed last week; and Messrs. Curtis & Co., Devon Roseries, a like award for Rose Bessie Johnson, a bluish Hybrid Perpetual. Miss Thomson, 4, Adelaide Road, Penge, sent some exquisite button-hole bouquets, entirely composed of out-door flowers.

AMONG THE MANX MEN.—No. 1.

HAVING mentioned to a friend that I intended passing my month's holiday in the Isle of Man, he wrote forthwith a fierce remonstrance; depicted the dangers of the Irish Channel; believed the men, if not the women, had three legs; knew a reply to a letter could not be had under four days, and finally made this quotation—

"When Sathane tried his arts in vaine
Ye worship of our Lorde to gaine,"

he reserved from his offer of the "kingdoms of the earth" the Isle of Man, for he said,

"That is a place I cannot spare,
For all my choicest friends are there."

However, this confirmed instead of deterring me, for I have not forgotten my school-days' adage, "It is right to be taught by your enemies," and I resolved to learn how Satan's "choicest friends" managed without poor-rates and turnpikes. So hither I journeyed, and assure your readers, if you permit my vagrant notes to appear in your columns, that if the Manxites are Satan's "*selectæ e profanis*," they and their habitation are agreeable rather than otherwise.

Beginning at the beginning—and what is news to to myself I always fancy must be news to others—it is to be observed that the maiden lady who might truly have sung

"Alas! I am now forty-three,"

was quite on the wrong path when her hopes revived at the prospect of sojourning in the "Isle of Man," for the name has no allusion either to the number or superiority of its male population, but is merely a derivation from the Scandinavian *Mon*, isolated.

"Tis Mona, the lone, where the silver mist gathers,
Pale shroud whence our wizard chief watches unseen
O'er the breezy, the bright, the lov'd home of my fathers;
Oh! Mannin! my graih my chree! Mannin veg veen."

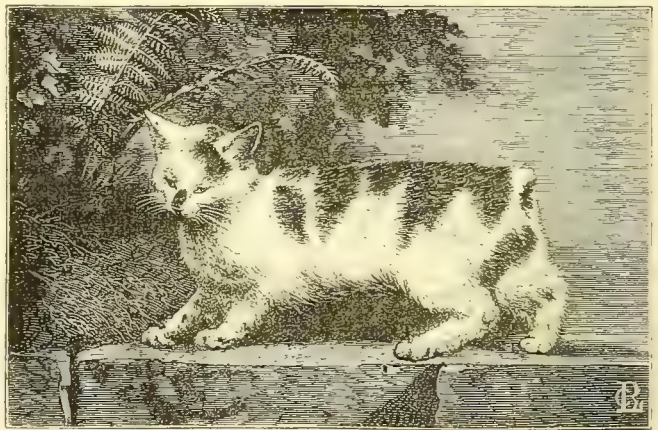
Mannin is the Manx name of the island. Strange is it that its language is so distinct from our own, and stranger still that it is possible now within twenty-four hours to hear our fellow islanders speaking four languages differing from our own. Thus, the day I arrived here was Thursday, and in Gaelic it is called *Dir-daoinne*; in Welch, *Did-Jau*; in Irish, *Dia-dardom*; and in Manx, *Jerdein*. This last is the softest-sounding of the five, and the same characteristic is applicable to the island climate.

When I turn my eyes to the window of the room in which I am writing, I look over a garden in which are large standards of Fuchsia coccinea, and a scarlet Geranium that has lived unprotected through six winters. This is not surprising when you know that I am near the margin of Douglas Bay, and that the temperature near the sea is always from 2° to 4° warmer than even two miles inland, and even there the mean temperature of spring is 44° 7'; of summer, 56° 17'; of autumn, 49° 97'; and of winter, 40° 9'. At Castletown the Crocuses are in flower several weeks earlier than at Ballasalla, only two miles from it, but inland. Another proof of the climate's mildness is that Apples, large and eatable, were in the market in the first week of this month. In 1805, a cartload of vegetables brought to that market was crowded round as a prodigy, but they are now abundant there, and of excellent quality. I see that Mona's Pride Kidney Potato was in one of the prize-taking collections at the Birmingham Exhibition, and there was in the market here a basket of it—they were the fairest, finest, early tubers I ever saw. Another sight quite new and attractive to me were the sellers of butter and eggs; there must have been sixty respectably-dressed countrywomen—I counted forty—arranged in two parallel rows, between which the purchasers passed. Each woman had a basket of butter,

and another of eggs, new-laid, fourteen for 1s., and all large, none of the minikin Cochinchina productions.

I observe the mongrel breeds of fowls—for even the Rumpies are mongrels—are all large, mixtures of many sorts probably, but evidencing very strongly that the Spanish and the Dorking were among their forefathers. I have seen it stated that the eggs of the Rumpies differ in shape from those laid by other varieties, but I have ascertained it is not a fact; at least, the mongrel Rumpies lay eggs of the normal shape, and I fancy that no one ever saw an egg of a pure Rumpie. Some of those which I have seen are double-combed, and like large Silver-pencilled Hamburgs without a tail; but others are single-combed, black-feathered, and white-lobed, evidences of Spanish kindred; and a third specimen was unmistakably descended through one parent from the Golden-spangled Hamburg with the addition of a coloured top-knot. This tail-less variety is common not only in this island, but in all the Hebrides, but I know not its normal plumage.

It would puzzle naturalists to explain why tail-less fowls and tail-less cats should prevail here and not elsewhere in the British Islands. Tradition, however, may save naturalists being foolishly imaginative, at least, so far as regards the cats. A beautiful specimen is on the wall of the garden near me, and I will supply you with a portrait, not of her, but of one very



Manx Cat.

similar. Manx cats, called here sometimes Rumpies, and at other times Stubblins, if of high degree—the feline blue-bloods, which are wild, have not even the rudiment of a tail. One tradition is that they are hybrids, the parents being a common cat and a rabbit. This tradition may have been suggested by the hind legs of the Manx cats being longer than those of the common cat, raising the rump somewhat after the mode of a rabbit. At all events they have none of the habits of the rabbit, for they are good mousers and "will mew." Another tradition, probably nearer the truth, is that the originals were from one of the ships of the Spanish armada destroyed on the coast. We know of the intercourse the Spaniards then had with India, and we also know that there—namely, in Burmah and the Malay Archipelago, there is a similar breed of tail-less cats.

As they differ from us Englishers in these zoological productions, so do these Manx men differ from us in many of their customs—customs of bygone ages linger here.

The day after I landed was Midsummer-day, and therefore St. John's-day of the Old Style; and information was given me that it was "Promulgation-day," the meaning of which was as much hidden from me as it would be, if unexplained, from most of your readers. The Manx men have their House of Parliament, but called the "House of Keys," a suggestive name, for its members pass laws for the locking-up of the persons of the islanders and unlocking their treasures. In days "long, long ago," the "House" promulgated the laws passed during each year by reading them to the people assembled round Tynwald Hill on St. John's-day, a day probably selected because it is in a season usually fine-weathered. Now, Thynghwall means a popular assembly on a bank, and that bank is now near Douglas, is a terraced turf-covered mound—I send you a drawing of it—and there I saw thousands of holiday-makers professedly assembled to hear the law promul-

gated, but really to hold high festival, for St. John's fair was also then and there held. However, the law was read, and an imposing procession of the island authorities was gone through both to and from St. John's neighbouring church.

The summit of the hill on which the authorities stood and the steps up which they passed to it were strewn with Rushes, a practice still retained in houses here on the 1st of May—relic of the daily custom in ages when carpets were unknown.



Tynwald Hill, St. John's.

Probably in no part of the British islands are old customs and superstitions so commonly retained as here; indeed they have this proverb, "If custom be not followed custom will weep." I will notice a few connected with plants. Primroses, Buttercups, and Lent Lilies are placed before the house door on May-day to exclude the fairies. On Christmas-eve the churches are decked with evergreens and flowers, and the service protracted far towards midnight by successions of singers, who sing *carvals*, or, as we call them, carols. St. Bridget was a most popular saint in this island, and on the eve of her anniversary, February 1st, a bundle of Rushes was gathered, and after a short petition to the Saint that she would rest in the house, they were strewn upon the floor for her to repose upon. It is still maintained by many that no iron should be put into the fire on Good Friday, and they use a stick of Rowan (Ash) instead of a poker. On St. John's-day Mugwort was gathered as a preservative from witchcraft; and green gaass was carried to the top of Barrub Hill as a tribute to Manninan-beg-mac-y-lear, but who that worthy was I cannot inform you. Since I wrote that, information has reached me that legendary he was "Little Manninan, Son of the Sea, first ruler of the island."

I may have occasion to notice many of the other superstitions still lingering here. Let no one conclude, however, that the people are ignorant. Customs and superstitious practices are clung to long after a belief in them has ceased; the educated cling to them for their antiquity's sake, and I verily believe the more high our education the more firm our attachment to the ways of our forefathers. At all events, in no part of the British dominions is good education so general as in the Isle of Man. England is only in the present year following the established laws of this island, for this enacts that a school shall be built and maintained in every parish by assessment on the inhabitants, and that every child of a fitting age shall attend. There are more than fifty such schools in the island.

In my next I hope to have much to tell relative to the gardening of the island, for I shall have seen more of its gardens, and shall have attended its chief horticultural exhibition.—G.

HORTICULTURAL CONGRESS AT BIRMINGHAM.

ON FORM IN TREE SCENERY.

By WILLIAM PAUL.

THE bountiful Giver of all good gifts has distributed His favours with a more equal hand than those unaccustomed to the study of Nature and Nature's laws might reasonably suppose. Man, the last crowning act of creative power, wisdom, and beneficence, is variously endowed both mentally and physically. One excels in action, another in counsel; to one is given great muscular strength, to another power of endurance; and as we descend step by step in the scale of creation, we shall find the same rule obtain. Among birds, those endowed with the richest plumage seldom possess the highest gifts of song. We gaze in admiration on the plumage of the peacock, and we listen in ecstasy to the song of the nightingale.

There is more variety in the vegetable than in the animal kingdom; but in the latter there is motion, which compensates, or more than compensates, for the greater variety in the former. Among trees, the colours of leaf and petal are less vivid and durable than in plants of lowlier growth; among flowers, the most attractive in size and colour seldom emit the most grateful odours. The Hollyhock, the Dahlia, the Camellia appeal irresistibly to the eye, but the lowly Violet, the Daphne, the Mignonne, whose flowers one might pass a thousand times unnoticed, fill the air with sweet and delicate perfumes. Even among Roses, the intermediate or pale colours, of which examples are found in the old Provence and Tea-scented, are usually the sweetest.

In a paper "On Colour in the Tree Scenery of our Gardens, Parks, and Pleasure Grounds," read at Oxford in the summer of 1870, to which this paper may be considered the sequel, I endeavoured to show that the absence among trees of the bright colours found in flowers, was in part compensated for by the greater breadth and bulk of trees and shrubs. The subject then was colour, the subject now is form; and apart from the utility of trees for shelter, timber, and various domestic purposes, the almost infinite variety in the outline, in the arrangement of the spray, and in the sizes and forms of the leaves, place the tree world in a higher position than it might at first sight appear to occupy. Taken from the decorative point of view, tree scenery may, I think, be divided into the Beautiful and the Picturesque. As an example of the Beautiful may be instanced the avenue of Horse Chestnuts in Bushey Park; as an example of the Picturesque the groups of Scotch Pines on Hampstead Heath. Variety is the leading characteristic of the tree world. That this has not been recognised, or at least not generally acted on, by those to whose lot has often fallen the disposal of our trees and shrubs in what is called ornamental planting, has long been a settled conviction with me. With your permission I shall therefore endeavour to unfold my views on this subject, in the expectation that I shall be enabled to establish this position, and thus lead to higher and more artistic arrangement in the tree scenery of the future.

I shall speak—1st, Of the form or outline of the individual tree; 2nd, Of the form or arrangement of the spray; 3rd, Of the form of the leaves.

1. *Of the Form or Outline of the Individual Tree.*—Five of the most distinct forms are—

- | | |
|----------------------|---------------------------|
| 1. Irregular..... | Example, The Scotch Pine. |
| 2. Round-headed..... | " Robinia inermis. |
| 3. Laminar..... | " The Silver Fir. |
| 4. Columnar..... | " The Lombardy Poplar. |
| 5. Weeping..... | " The Weeping Willow. |

These I shall call representative trees, as a great portion of the tree-world may be classed under one or other of these forms. There are, however, many intermediate forms in which two or more of the above are found combined. For instance: The Oak and the Beech partake partly of the irregular and partly of the round-headed; the Cedar of Lebanon, especially when old, stands between the round-headed and the laminar. The Hertfordshire Elm is both irregular and weeping, and is from an early age one of the most picturesque of large trees. Then some trees undergo modifications of form as they pass from youth to middle and old age; but these are only so many additional points of variety which the skilful planter will know how to seize and make conformable to his plans.

Now I think a very little consideration will lead to the conclusion that with the variety shown to exist under this one head only, very little excuse can be found for the tameness and monotony often met with in English plantations. I can well understand the reasons for, and have often admired the effect of, large masses of any one of these forms being thrown together under special circumstances. Further, nothing can be more correct or beautiful than a group or groups composed of any one of these when judiciously placed, and rising in harmony with

each other or with the natural features of the landscape. What I find fault with, and wish to see altered, is the unseemly jumble of trees so often met with. No guiding principles having been observed in planting, things beautiful in themselves are comparatively dull and uninteresting through the want of thought or taste in their arrangement, or even displeasing through incongruity. Now, I am quite ready to admit that it is easier to condemn that which exists, than to lay down any precise rules by which the uninitiated may attain the end which seems to me so desirable. I seek variety and contrast, but it must be variety and contrast with harmony. The professional man, when engaged to put the finishing touch on a garden or estate by planting, if properly imbued with the importance of his task, should master all the natural beauties and defects of the spot to be dealt with, including its accompaniments and surroundings, and then study to increase the beauties and remedy the defects.

Whether the beautiful or the picturesque predominate naturally, it should not be reduced, but heightened by every possible effort of art, and only varied by the introduction of other features of beauty in such manner that they may not rival or overpower, but remain subservient to, this dominant natural feature. Allow me to offer a practical illustration of this remark. I was recently engaged to make suggestions for the improvement of a park which had at no distant period been increased in size by the addition of some outlying fields, and had never, so far as I could observe, been brought under the hands of the landscape gardener. The dominant feature observable in this old park was the picturesque; the surface was variously undulated, and there was a broad sedge stream with hoary trees overhanging its banks winding through it, and quitting it near the principal entrance. Here was a lodge to which the picturesque extended, but not in the fulness of beauty to be found within. By planting groups of some of our most beautiful and more regular trees around this building a new feature was introduced, affording variety and contrast without destroying or marring the effect of the natural beauties within. Again, when adding the fields to the park, the hedgerows which had been left greeted the sight on every hand with hard unsatisfactory lines of trees in positions and of a character quite out of harmony with the surroundings. These lines were broken by removing some of the trees and grouping around others. Again, in the immediate vicinity of the mansion, where there was an impression of barrenness, symmetrical trees were introduced, working those of irregular forms outwards towards the park in such manner that the picturesque and beautiful were gradually and insensibly blended. I offer this as a general example of the way in which trees may be used so as to produce the best effect in the landscape.

When planting in the vicinity of a dwelling-house, whether it be a mansion or a cottage, we often find ourselves under considerable restraint, because the form of the trees requires to be in harmony with the character of the building. It may not be necessary to consider every style or order of architecture as requiring a different assortment of trees; for our purpose it suffices to divide the whole into Perpendicular, of which the Gothic may be given as an example, and the Horizontal, which is fitly exemplified by the Italian style. Irregular, round-headed, and weeping trees are in character with either, but the laminate and round-headed are most pleasing to my mind in connection with the Perpendicular, and the columnar and irregular with the Horizontal. If the building be low, tall-growing trees should be avoided, and the round-headed, the laminate, and weeping are especially desirable, because they direct the eye horizontally and downwards. It should ever be borne in mind that the presence of lofty trees in proximity to a low building has the undesirable influence of still further depressing it.

As examples of the grouping of these representative trees, the irregular and columnar and the irregular and weeping will, I think, be most frequently available in association. Two Scotch Pines and a Weeping Willow, or a Scotch Pine and two Lombardy Poplars, make a nice group when variety of form, colour, and character are required. There is, however, scarcely any limit to the variety that may be obtained by the combination of these representative trees, but to make the best of them two things are necessary—a wide knowledge of the nature and appearance of the trees, and a correct taste in order to combine them in such a way that they are not only in contrast but also not out of harmony with each other or their surroundings. When the irregular or varied dominate in the surrounding tree scenery, separate groups of the "round-headed," the "laminate," the "columnar," and the "weeping" may often be sparingly introduced with good effect.

2. *On the Form of the Spray and Ramification of Trees.*—This is a matter of less importance than the form or outline of the tree, because it is only distinguishable when immediately under the eye, whereas the outline of the tree produces an effect on the landscape from a considerable distance. For some purposes trees are divided into evergreen and deciduous, the former holding their leaves perpetually, the latter losing them annually on the approach of winter. Although the spray and ramification vary considerably and equally in both, we

need here only entertain the question so far as it appertains to deciduous trees, as, the evergreen trees retaining their leaves perpetually, the spray and ramification are almost concealed by them.

I give here as examples the spray and ramification of four trees—the Oak, the Elm, the Lime, and the Beech, having chosen them because they are well known and readily accessible. It should, however, be remarked, that there are others differing as widely in form and character. To those who find an interest in tracing the wonderful variety in the vegetable kingdom, there is here an ample field for observation and reflection. Scarcely two trees, scarcely two branches can be found alike.

The change of a deciduous tree from the leafy to the leafless state is a change in form and character, and hence a new sort of variety. A deciduous tree in leaf is seen in outline only; when denuded of its leaves it shows also in section. Deciduous trees are not only more varied in character than evergreens, but they are also more pictorial. There is the early and late budding of the leaves, the varied tints of which give colour to the tree scenery of spring; there are the fully developed leaves of summer, the changing and brilliant hues of autumn, and lastly, the interesting variety of the spray and ramification visible in the leafless trees in winter.

Permit me to remark here, that in my judgment there is no gain in rejecting either evergreen or deciduous trees when planting. Evergreens, as a rule, are massive and heavy; deciduous trees are light. Evergreens alone produce gloom, deciduous trees alone baldness—a judicious combination of the two is productive of higher results than can be obtained by the exclusive use of either.

3. *On the Form of the Leaves.*—The effect of the form of the leaves, although more marked than that of the spray and ramification, is not appreciable at any very great distance. It is, however, a most important feature from a near point of view. In garden scenery it is scarcely less important than the form or outline of the tree. Leaves are numerously divided by botanists, but for our purpose the following divisions seem to me to suffice.

- | | |
|-----------------------|---------------------------|
| 1. Needle-shaped—Pine | 4. Cut-leaved—Plane. |
| 2. Lanceolate—Willow. | 5. Compound—Black Walnut. |
| 3. Round-leaved—Lime. | |

Here, as in the outline of the tree, the intermediate forms are innumerable. In garden and shrubbery planting a most complete effect may be produced by an arrangement founded on the forms of the leaves alone. But so rich and various is the material at our command here, that is by no means necessary to restrict ourselves to this one feature, trees and shrubs often producing beautiful summer flowers, coloured spring and autumn leaves, or winter berries.

With regard to the arrangement of trees and shrubs according to their leaves, violent contrasts should, I think, be avoided. I would not place a tree with needle-shaped leaves in juxtaposition with one bearing large, round, or heart-shaped leaves. For example, a Scotch Pine (needle-shaped), and a Willow (lanceolate), in association, would please me better than a Scotch Pine and a Lime (round-leaved). Some compound leaves associate well enough with the needle-shaped, and others produce a better effect associated with the round or cut-leaved. The lanceolate is, perhaps, the most useful and accommodating form, as it stands well in contact with almost any of the others. Any one desirous of obtaining a full and accurate knowledge of this art would, however, gain more correct knowledge in a single hour by walking among the objects to be dealt with, and placing them, mentally or otherwise, in juxtaposition, than could be conveyed by a week's writing or talking.

I will give two or three instances where I have been enabled to some extent to carry out the views I have endeavoured to enunciate, and these may be inspected by any who may be inclined to pursue the subject.

In carrying out improvements in the Temple Gardens, London, it was required of me to hide out from the view of the Parliament Chamber a block of unmeaning buildings on the other side of the river. The variety of trees was limited by the climate of London; and further, a huge Catalpa stood in the way—a tree of historic fame. As this could not be removed, the round formal head of the Catalpa was brought in closest contact with trees of irregular form, and its broad leaves were associated with trees bearing compound leaves. Around it were grouped the Ailanthus, Horse Chestnut, and Mountain Ash, with an undergrowth of Aucuba, Phillyrea, Silver Euonymus, and Box, parted by various deciduous flowering small trees and shrubs, as Lilacs, flowering Currants, double Sloes, double-flowering Peaches, and the like.

I have recently been engaged by the Metropolitan Board of Works to carry out improvements at Hamilton Place, London. Here, again, I was limited in my choice of trees and shrubs by the climate of London. Evergreens and shrubs were arranged as to form and colour, so far as it was possible to do so under the circumstances. A line of trees planted by the side of the railings bounding Park Lane was planted as follows:—Scarlet Horse Chestnut and Mountain Ash alternately; Turkey Oak,

Mountain Ash, Acacia, and Thorn in succession; and, again, Thorn, Mountain Ash, Acacia, Laburnum, and Thorn in succession. Here the undergrowth was formed of evergreens and deciduous shrubs, variously mixed, to make as agreeable a contrast as possible in form and colour with the surrounding plantations.

The most complete piece of planting which I have recently had the opportunity of effecting may be seen at Hatfield Park, a seat of the Marquis of Salisbury. This consists of a belt of shrubs and trees running by the side of a lake. My instructions here were to make colour rather than form the dominant feature, although the latter was to be taken into account. The trees in groups ran much as follows:—Scarlet Oak, white Maple, scarlet Maple, variegated Turkey Oak, purple Beech, golden Oak, variegated Elm, silver Poplar, and golden Willow. The shrubs and evergreens in masses succeeded each other in the following order:—Mahonia japonica, Silver Holly, Laurus caucasica, variegated Box, Juniperus ericoides, Thuja aurea, Ilex balearica, Yews, Mahonia Aquifolium, Juniperus chinensis, Aucuba japonica, green Holly, Berberis Darwinii, Portugal Laurel, Cotoneaster, green Box, Gold Holly, Laurustinus, Phillyrea, Thuja borealis, and Portugal Laurel. Small groups of deciduous shrubs, as purple Nut, golden Spiræa, purple Euonymus, Hippophaë, purple Berberis, Shepherdia, and the like, were also introduced at intervals among the above for the sake of colour. These are now in their second year's growth, and require time to realise the intended object; but the effect, whether viewed in close proximity or from the opposite shore of the lake, has attracted the notice and received the commendation of some of our best garden artists.

I shall now give a list of a few of the most desirable trees and shrubs, arranged under those divisions of form which I have already submitted to you:—

Examples Selected according to the Form of the Tree.

1. Irregular: the Scotch Pine.
2. Round-headed: Robinia inermis.
3. Laminated: the Silver Fir and other Piceas.
4. Columnar: the Lombardy Poplar.
5. Weeping: the Weeping Willow.

Examples Selected according to the Form of the Leaf.

1. Needle-shaped: the Scotch Pine and other Pines.
2. Lanceolate: Salix babylonica and most other Willows.
3. Round-leaved: the Lime.
4. Cut-leaved: the Plane.
5. Compound: the Black Walnut.

STAPELIAS, THEIR CULTURE AND PECULIARITIES.

By J. CROUCHER.

NATIVES of the Cape of Good Hope, they are greenhouse subjects. Though easily grown many fail, saying they grow very well for a time, and then decay. This I attribute to the climate they come from not being understood, and the common practice of taking it for granted that, as they get a dry season, it must be during our winter; so they are allowed to shrivel, the result of which is, that when they should grow in spring, the bottom often decays, and the plants get over it just in time to be served so again. Now every observer of Cape plants knows well that they have a tendency to grow freely during our winter, and though this may be retarded it must not be arrested; therefore Ixias, Pelargoniums, and Heaths are exposed to all the light we can get, but the poor Stapelias are put on some out-of-the-way shelf.

At the time we are getting our dullest and coldest days the Stapelias at the Cape are getting their brightest and hottest; therefore we ought to give them all the light possible, and as much heat as is compatible with it. Like other Cape plants they do not like fire heat, therefore they should be as far from the pipes as convenient; they stand the winter and flower better if exposed to the open air from June until September. It is best to strike a fresh stock every season, taking the branches off at a joint to prevent danger of decay and escape of sap. April and May are the best seasons; put them in close to the edge of the pot, and keep them dry for a week, when water may be given; after which, give it when quite dry. If they are well exposed to sun they will strike in three weeks. Seed should be sown as soon as collected, or its vitality will soon be gone. Sow in shallow pans in light soil, and put on gentle bottom heat; as soon as well up, put on a shelf close to the glass, not potting-off until well grown, as they often stand still for some time, or die. Three parts loam, and one broken brick, are the best soil, excluding sand or manure; in this soil, with small pots, they grow freely, and though we have one species called europæa, or italica, yet I have seen it luxuriating above its natural growth in a temperature of 100° Fahr.

Seeds for transmission should be put into sealed bottles, or oil paper. The plants are very difficult to import; the best plan is by means of a small wooden box, using dry sand for packing material.

For diversity of structure, and development of the flower, I

think Stapelias are very interesting, and though botanists persist in quashing Haworth's divisions, I like them; and if we allow Cattleyas and Lælias, or Oncidiums and Odontoglossums to stand distinct, I think the Stapelias should be separated. As to affinity, of course that is evident; so it is in the whole order Aroideæ, and Orchidaceæ, the difference being in degree of development of the same organs, not in their presence or absence.

If we would study any set of plants minutely, we must have sub-divisions. In a genus containing seventy to eighty species the first thing asked of any plant is, what section does it belong to? And to me it appears easier to say Huernia or Orbea than sub-genus Orbea.

In Stapelia grandiflora and hirsuta we have pubescent stems and hairy flowers, five-partite reflexed corolla, the centre plain, and the corona which protects the stigma parted into ten, five spreading outwards, the other five, which include the anthers, incurved; while in section Orbea, to which S. variegata and Buffonia belong, the whole plant is glabrous, the corolla is reflexed, and round the centre is a raised part, resembling the top of a leaf; the corona is raised in elegant tiers, like that of a crown, entirely distinct from the former. In Huernia we have a campanulate corolla, cut into ten segments at top, the inside clothed with glandular hairs, and the corona spreading like teeth; the arrangements of the ligules give interest to each section.

It is a well-known fact that these plants evolve a very caction-like scent, and the common blowfly, being deceived thereby, deposits its eggs amongst the hair of S. hirsuta and allied species; in this section the scent is strongest, and I have not noticed them in the smooth kinds. As soon as they are hatched they begin to search for food, and, as a matter of gravitation, go downhill. The pollen-masses being clammy, and the aperture leading to the stigma being so small, the pollen could not possibly get to the stigma unless by artificial aid. Here the maggot is of use; the source of the scent being the stigma, the maggot, in its endeavour to get down the aperture, forces the pollen into the stigma, and thus impregnates it.

This I have watched often with much interest; here also we see the use of the hairs—were it not for them the young maggots would get blown away by the winds. It may be asked, How do those get on that have no hair? On examining them, it will be found that the apertures are larger. It has been said that Stapelias were not fertilised by the pollen of the same flower; but I have often seen seed on a plant that had but one flower, and the seedlings were true.

The species called europæa is said to be a native of Europe, but I have often received it from South Africa, and I know of no plant, excepting our own Thistle, more likely to cross the sea in a storm of wind, the pappus expanding almost instantly in the sun.

NOTES AND GLEANINGS.

MADNIP AND WOOD LAUREL.—Madnip, says Mr. Gerard Smith in the *English Mechanic*, is an old name of the Cow Parsnip, *Heracleum Sphondylium*, L., and a figure is given in Gerard's "Herbal," by Johnson, page 1009. Among the virtues of the plant these are enumerated:—"If a phreنتicke or melancholicke man's head be anointed with oil wherein the leaves and roots have been sodden, it helpeth him very much, and such as be troubled with the headaches, and the lethargie, or sickness, called the forgetful evils." No special medicinal virtue is attributed by modern writers to the Cow Parsnip. I have somewhere read that in northern Asia the skinned root is a favourite morsel with the natives. Wood Laurel is, I conclude, *Daphne Laureola*, L., Spurge Laurel, a dwarf shrub, not uncommon in woods, hedges, and thickets. In most catalogues of native plants it is named Spurge Laurel; but in the excellent "Flora Vectensis," Dr. Bromfield gives it the name of Copse or Wood Laurel, as well as Spurge Laurel. I remember when in Sussex, the sudden clearance of a wood of every plant of this species by strangers; on inquiry, the cottagers told me that it was taken to the market at Chichester and Portsmouth, and sold as horse medicine, but I could not learn in what class of diseases it was used. The bark is hot and pungent enough. The plant, especially the bark of the roots, has been usefully applied in some skin diseases of bipeds. (See *Pharmaceutical Journal*, 1, 397, and Dr. Cullen). I had some reason for believing that the bark of *D. Laureola* was sold as a substitute for that of *D. Mezereon* in making compound decoction of Sarsaparilla. Its qualities, indeed, are similar; as are those of other species, *D. Gnidium*, *pontica*, &c.

—REV. C. P. PEACH writes—This weather is a good criticism on WEATHER PROPHETS, *vide* watering article in a contemporary. The rainfall here (Appleton-le-Street) was, July 11th, 1.08, July 12th to July 13th at noon 2.32; total 3.40 in fifty-four hours. Wind S.E. Storm on July 11th, electrical.

The one last night (July 12th) and this morning 2.32, pure rain without lightning, a sort of tropical downpour.

— On the 9th inst. their Imperial Majesties, the ex-Emperor

and Empress of the French and suite, paid a visit to the nurseries of Messrs. George Jackman & Son, Woking, to inspect their splendid collection of Clematis, which is now in full bloom.

SOLANUM WARSCEWICZII.

THE accompanying illustration portrays a very handsome species of this large and exceedingly diversified genus; it is, perhaps, one of the very best kinds for out-door decoration in the summer months, inasmuch as its bold and deeply pinnatifid leaves render it a remarkably effective and distinct feature in the sub-tropical garden. Its constitution, also, is sufficiently hardy to warrant its adoption for conspicuous positions, and the same cannot be said of all the plants I have seen used for this purpose. Nothing exhibits such bad taste, in my estimation, as the planting of a number of tropical plants in the open air, simply because they are tropical plants, many of them having no decided character to recommend them, but having to fight with our climate a dreary battle for mere existence. The plants which lend enchantment to the pleasure ground during the summer are such as the present subject—plants that have large, bold, and decidedly characteristic leaves and a robust constitution, which will enable them to develop their beauties even in our somewhat ungenial climate.

Solanum Warscewiczii is remarkable for its robust and branching habit, and its bold pinnatifid leaves; in addition, the stem is profusely armed with stout slightly recurved spines.

The petioles of the leaves, as well as the stem, are furnished with a coating of short reddish brown hairs.



Solanum Warscewiczii.

There is an immense number of species and varieties of this genus. Many of them, being destitute of any distinct character, are not worthy the amateur's attention; others are very beautiful, but require in-door culture; nevertheless, there is a sufficient number of species quite hardy enough to grow in the open air during summer, and forming valuable adjuncts to the flower garden. In using them, however, it should always be borne in mind that these large-leaved plants are very liable to be torn and beaten about by the wind, therefore the shelter of neighbouring shrubs or trees will greatly assist them to withstand cold and rude blasts.

Their culture is not by any means difficult. They enjoy good rich loamy soil and an abundance of water. Early in spring a little seed should be sown, and the plants encouraged, so that they shall have attained a fair size before removal to the open air. Those amateurs who have the means of wintering old plants should insert the cuttings of the lateral shoots in a little heat during February, and if

well treated they will make better plants for the decoration of the garden than seedlings.—EXPERTO CREDE.

NEW BOOK.

My Garden, Its Plan and Culture; together with a General Description of Its Geology, Botany, and Natural History.

By ALFRED SMEE, F.R.S., &c. London: Bell & Daldy.

CONTINUING our notice of Mr. Smeë's work, we now furnish our readers with a description and view of the fernery.

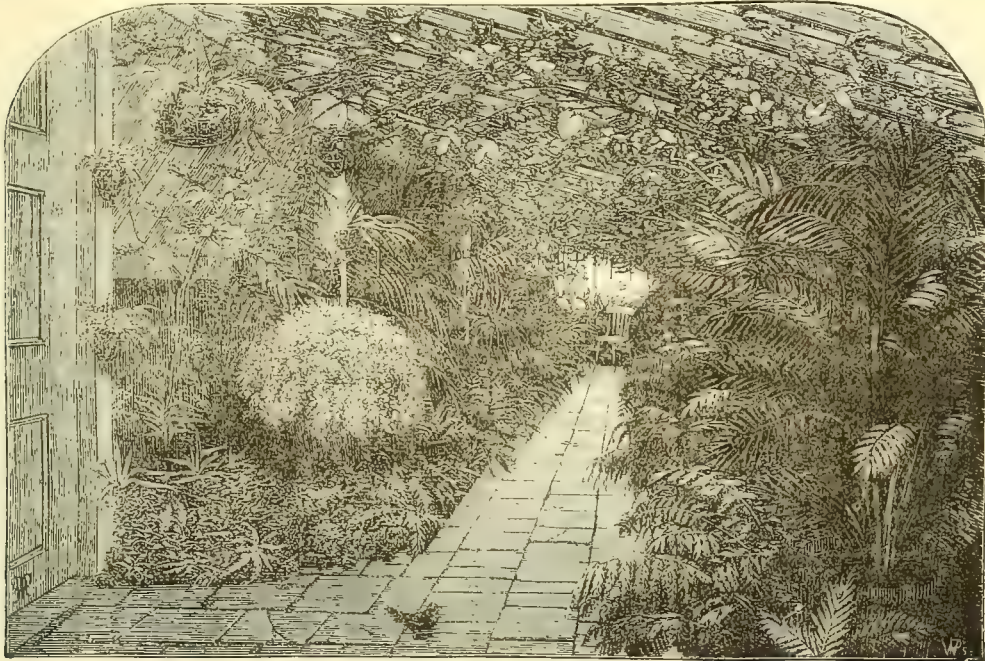
"My fernery next demands description. It is about 80 feet long, and has about sixty rafters. The glass faces the north

and the whole house being well sunk in the ground, has very much the appearance of a long frame. The door is at the back of the house, on its southern aspect, so that the northern side presents an uninterrupted surface of glass, through which the light of heaven from a clear northern sky penetrates. The southern side is chiefly made of boards, covered with tarred asphalted felt, which is a bad conductor of heat and a great protection against frost. In conformity with more extended experience of the value of light to Ferns, I have placed some glass on the southern side; but trees have been planted in front, so that in summer the leaves keep off the rays of the burning sun. In winter, however, when the leaves have dropped, abundance of light penetrates into the house through their naked branches, to the great benefit of the plants.

"A stream of water runs through the fernery, which is dilated, at one place, into a pond, and though the house is a mere roofing of glass supported on posts, it is universally admired as a very beautiful place: Mr. Robertson has very

faithfully rendered it. The view of it is taken facing the west—the instant the house is entered; and the little bird in it is one of the poor frozen birds caught during the snow and ice of winter, which luxuriated and cleared the house of insects, but which flew away to its native haunts as soon as it could find a hole through which it could escape.

"In this house I desired to grow Ferns from all parts of the world, that they may be seen at a glance; and thus I required a house varying in temperature from the tropical to the temperate climates. It requires much thought to obtain this result in any given house, especially where currents of air and draughts are objectionable. The result has been perfectly obtained on the first design, by raising the floor at the warmer end, by placing more rows of hot-water pipes in the part of the house between the door and the end desired to be warmer, and by preventing the currents of hot air traversing the length of the roof by the interposition of screens of climbing plants. The transition in winter from this lovely scene of Ferns and



Interior of Mr. Smee's Fernery.

flowers to the equally lovely scene outside of frost and snow is enchanting. To obtain these effects they must be designed; and with me it is difficult to decide which is the more enjoyable, to contrive the picture or to contemplate it when made.

"For the construction of the roof of the fernery, a deal plank was split into three parts, each of which constituted a

rafter, and on the edge a portion was cut away to receive the glass. The rafters were not even planed, but had before glazing three coats of anti-corrosion paint. I place great importance on this thorough painting before glazing, as it is a material aid to the adhesion of the putty. After glazing, two more coats of paint were used, as it is inconvenient to repaint a house full of plants."

MR. AYRTON AND DR. HOOKER.

It has seldom been our lot to peruse a more painful document, or one of which the Government and the public have more reason to be ashamed, than the confidential statement addressed to the First Lord of the Treasury, and signed by eleven names of unimpeachable authority, concerning "the treatment which the eminent Director of the botanical establishment at Kew has systematically received at the hands of Mr. Ayrton since his appointment to the office of First Commissioner of Works." Sir Charles Lyell, Mr. Charles Darwin, Sir James Paget, Professors Huxley and Tyndall, Mr. William Spottiswoode, and the Presidents of the Royal Institution, the Royal College of Physicians, the Royal College of Surgeons, the Royal Geographical Society, and the Linnean Society, respectfully invite the Prime Minister "to decide whether Kew Gardens are, or are not, to lose the supervision of a man of whose scientific labours any nation might be proud, and whose natural capacity for the post he occupies has been developed by a culture unexampled in variety and extent; a man honoured for his integrity, beloved

for his courtesy and kindness of heart; and who has spent in the public service not only a stainless, but an illustrious life." The resignation of Dr. Hooker is, in fact, the "calamity to English science" and the "scandal to the English Government" which Mr. Gladstone is solicited to avert; and we regret to find that it is after eight months of unavailing efforts and remonstrances that the signatories of this appeal, to the head of the Government have felt compelled to make it public. Among the 600,000 visitors to Kew Gardens during the last twelve-month, or the 37,795 who entered and quitted the Gardens last Whit Monday, "without a single case of drunkenness, or of theft, or mischief of any kind being reported," there must be many who feel personally indebted to the illustrious Director of that noble national establishment without knowing precisely how, and in what manner and degree, they have entered into the enjoyment of his devoted labours, and reaped the harvest of his hereditary genius and self-denial. Among that number there perhaps may be some of the electors of the Tower Hamlets, who

have been led to compare the liberal speeches and professions of the First Commissioner, who still honours them by his choice, with his official acts—in the matter, for example, of open spaces; and who have begun to entertain serious doubts as to the indispensable connection between unmannerly rudeness and the insolence of office, and the qualities which should recommend a candidate to the preference of a popular constituency. At a general election it is a salutary custom to overhaul the “antecedents” and careers of intending representatives. “You will be able,” say these memorialists to the Premier, “with this sketch of the early training of Dr. Hooker for his present post before you, to compare it with the early training of Mr. Ayrton for the position which, by your favour, he occupies as Dr. Hooker’s master. You will be able to judge how far the First Commissioner is justified in treating the Director of Kew with personal contumely.” The comparison, so far as it relates to Dr. Hooker, is one that does honour to his country and to science. It may be well to summarise very briefly the history of the botanical establishment at Kew, and the biography of the Directors, father and son, who have been its virtual creators.

It was in 1840 that the private Botanic Gardens at Kew were handed over by Her Majesty to the nation. In accordance with the Report of a Royal Commission the present scientific establishment was founded, and the late Sir William Hooker, then Professor of Botany in the University of Glasgow, offered, “at a sacrifice of more than half his income,” to undertake its superintendence. His salary was to be £300 a-year. He brought with him his own excellent private herbarium and scientific library, and the expense of maintaining and increasing both was defrayed by the Director. Unaided by the Government beyond a grant of £200 to provide room for his invaluable collections, Sir William Hooker made his house the most extensive botanical laboratory in this country, and within ten years after his appointment Kew Gardens became “the first in the world.” With the collections made at his private cost, he founded the first museum of the kind that had ever been established, and never received a farthing of remuneration for his contributions. His salary was gradually raised to £800 a-year, he was provided with a house, and relieved of the double cost of maintaining the herbarium and obtaining assistance in the discharge of its excessive labour, but he continued to bear the cost of books and of new specimens, and for five and twenty years his purchases were made and his collections elaborated at his own expense and risk. Before his death he gave directions to have his herbarium valued and offered to the Government at the lowest valuation, and thus what “had previously been devoted to the nation’s use became the property of the nation itself.” Such were the antecedents and achievements of the first Director of Kew Gardens. His son and successor, Dr. Joseph Hooker, has vindicated by his own example the hereditary principle in a manner which monarchies and aristocracies might envy. In 1839 he was appointed assistant surgeon and naturalist to the Antarctic Expedition, “the most perilous, perhaps, that ever sailed from these shores, and the scientific results of which exceeded in importance those of any other naval exploring expedition of this century.” His pay was that of his medical officer’s rank. His outfit, his books, his instruments, the expenses of travelling and collecting ashore during his four years’ voyage of circumnavigation, were defrayed by his father. On his return he waived his claims to promotion, and devoted four additional years to the classification and publication of the results of his voyage, and aided his father as an unpaid volunteer at Kew. In 1847 he was sent in the interests of scientific exploration to India and to Borneo; his outfit and instruments cost the Government nothing; and all the incidental disbursements of his three years’ travelling and collecting amounted to £1200 more than the official grant, and were contributed by his father and himself. On his return from India he was again an “unpaid volunteer” at Kew; and from 1851 to 1860 he was employed by the Admiralty in publishing the botanical discoveries of naval and other voyages, receiving for this service £500 and three years’ pay as a naval surgeon. During three years laboriously spent in arranging his Indian collections and publishing his journals he received £400 a-year from the Government. The expenses of scientific journeys to Western Asia, to North Africa, and to various parts of Europe, were borne by himself, and the results given to Kew. In 1855, his father being seventy years of age, he was appointed Assistant-Director at £400 a-year without a house; his salary was increased three years later to £500, with a house; and in 1865 he succeeded, on the death of his father, with the unanimous approbation of the whole world of science at home and abroad, to the directorship at Kew. His salary was fixed at £800 a-year, without a secretary or an assistant; and of one-half of this modest salary he made a free gift to his country by purchasing in Paris at his own cost, and presenting to Kew, a collection of European Flora which was wanted to make our national herbarium complete. “Under the auspices of his father and himself, Kew Gardens have expanded from 15 to 300 acres. They have long held the foremost rank in Europe.

In no particular does England stand more conspicuously superior to all other countries than in the possession of Kew.” This is the testimony of such men as Sir Charles Lyell, Mr. Charles Darwin, Professor Huxley, and Professor Tyndall. The operations and literature of the Kew establishment are unrivalled, and they have been achieved, “for the most part, at no expense whatever to the nation.” The present Director has, to a great extent, remodelled and reorganised the gardens, at “a great saving in outlay, without any sacrifice of efficiency.” The number of living plants sent to various parts of the world has been doubled. India and the colonies bear witness to the commercial value of Dr. Hooker’s labours and discoveries. Kew has become not only a nursery but the model school of universal horticulture. And yet Dr. Hooker’s services in relation to Kew are only a part of his contributions to science. Geology, meteorology, as well as botany, count him as a master; and the Royal Geographical Society as one of the most adventurous and fruitful of explorers.

Such is the man who by a concatenation of political influences and events over which he could have no control, having had the misfortune to become Mr. Ayrton’s official subordinate, suddenly found himself a butt for contumely, insult, arbitrary insolence, and ignorance. One of the first of Mr. Ayrton’s acts in office was to send a reprimand to Dr. Hooker. “It was a new experience to the Director of Kew” after thirty years of public service. Intellectual eminence and moral worth appear to be as obnoxious to the First Commissioner as those “architects, sculptors, and gardeners,” whom he stigmatised with a felicity as singular as that which determined his own appointment. Mr. Ayrton has left nothing unsaid or undone that could render Dr. Hooker’s position at Kew unendurable even with the moral support of the scientific public and of his own conscience. Without notice given or reason assigned he superseded him in the most important of his functions; surreptitiously withdrew from him the care and treatment of his collections and the plant houses; tampered clandestinely with the loyalty of his subordinates; virtually deprived him of authority and responsibility; submitted to the Treasury plans and estimates for extensive alterations in the museum without consulting the Director, and involving a large and detrimental expenditure; and, beyond habitual discourtesy, introduced a policy into the management of the establishment subversive of discipline, and fraught with injury to the public service. Unable to obtain anything but insult in reply to his respectful letters of inquiry to the First Commissioner, Dr. Hooker at length turned with extreme reluctance, but with the fullest confidence, to the First Lord of the Treasury for redress. Mr. Gladstone communicated with Mr. Ayrton, and Mr. Ayrton requested Dr. Hooker to furnish him with dates, proofs, and particulars of his grievances. He furnished them in a letter, which was never answered, or even acknowledged, by Mr. Ayrton. Finding that the Prime Minister was so easily satisfied with Mr. Ayrton’s explanations, and unwilling to intrude the subject upon his attention, he begged to be put in communication with a private secretary. Accordingly, he had an interview with a private secretary at the end of October, and about Christmas was informed that a plan was under the consideration of the Government which would materially alter his position towards the First Commissioner of Works, and meanwhile he was requested to take no steps likely to embarrass the Government. So Dr. Hooker waited and waited till the last week of February, and was then “semi-officially” informed that the “plan”—whatever it may have been—was abandoned. Subsequently the Prime Minister placed the matter in the hands of the Marquis of Ripon, and on the 13th of March Dr. Hooker handed in a memorandum to a committee of the Cabinet. On the 13th of April Lord Ripon conveyed a verbal message to him which was to be regarded as a final answer to his appeal. This was to the effect that the Director was to be at the head of the establishment at Kew, “of course in subordination to the First Commissioner of Works.” So that after all this weary waiting for redress Dr. Hooker’s position was not better but worse for the delay; his authority was gone, his responsibilities superseded, his appeals unanswered, and his complaints ignored, and Mr. Ayrton was to all intents and purposes triumphant. No wonder that Dr. Hooker was not content with a verbal announcement, which the private secretary was so anxious to define as “a private and friendly communication,” though it had previously been described as “official and final.” He was promised, however, a formal official answer. The answer was sent, and it was substantially the former verbal answer reduced to writing, and signed, from Treasury Chambers, by the principal clerk. It contained, however, one additional and unintelligible paragraph, to the effect that the present form of estimate for Kew Gardens could not be altered, but would be acted upon, and would “in future be framed in accordance with the letter.” Dr. Hooker, being naturally somewhat puzzled by this Treasury logic, drew up a memorandum, inquiring of their lordships how the power, conferred by his original warrant of appointment, of preparing the estimates for the different branches of the establishment, was to be restored to him, and whether, in short, he was to be

entrusted for the future with the discretion and responsibility he had hitherto exercised.

To this letter no answer has yet been received, and the question whether the services of Dr. Hooker are to be lost to the country and to science in order that the susceptibilities of the First Commissioner of Works may be appeased, and that the Government may not lose the patronage of Mr. Ayrton, remains for the decision of Parliament and the country. If the electors of the Tower Hamlets were consulted they would gladly make amends for having, by their deluded choice of a popular member, discredited and harassed a Liberal administration, and turned that admirable national establishment at Kew from a botanic into a bear garden.—(*Daily News*.)

WORK FOR THE WEEK.

KITCHEN GARDEN.

By dint of good management and a thorough knowledge of the kinds it is possible in these days to supply a family with *Broccoli* or *Cauliflower* all the year round. The most difficult period, perhaps, is January. Many new kinds have come into notice of late, and many old kinds have been revived with new names. The following, if they can be obtained true, I should particularly recommend, for with them a constant succession can be secured—the *Cauliflower*, the *Cape Broccoli*, *Grange's Impregnated* (now sold under new names), the *Branching or Sprouting*, *Knight's Protecting*, *Melville's Superior Late White*, *Somers' Particularly Late White*, and *Snow's Late White*; the *Wilcove* is also a good winter *White*. Of *Somers' Particularly Late White*, as I had it, too much cannot be said. It is so very late that it carries the spring *Broccoli* season into that of the early *Cauliflower* without the interval of a single day—at least, so I have found it. The *Cape Broccoli* is well known to be very useful for stopping a gap. If properly managed they afford a dish at a time for many months; and if a good kitchen gardener is puzzled at any time for a single dish of *Broccoli* he immediately goes to his row of the *Cape*, and is seldom disappointed. *Grange's*, if sown in the first and third weeks of April, will produce beautiful heads in the following October, November, and December equal to *Cauliflower* in point of size, colour, and texture, and superior in point of hardness. *Melville's Superior White* is an excellent hardy late *white*. *Brussels Sprouts* are the hardiest and most prolific of greens. Too many can scarcely be planted out at this season, and they will stand very close together. The *Savoy* is very useful, and answers well to save the *Coleworts* through December and January. *Green Curled Kale* is too well known to need description, and although hardy and useful, it has a rival in the *Brussels Sprouts*. The dwarf and early-heading *Cabbages* are the best kinds for small gardens. These, if sown in August for the main crop to remain for winter sprouts, in the last week of February to produce autumn *Cabbages*, and again at the end of June and beginning of July for *Coleworts*, will produce a constant succession throughout the year. Look well to *Celery* crops and sowings of *Endive*. Plant the *Leeks* out, also the *Scarlet Runners*; and the *Marrow Peas*, at least those of a branching character, as the *British Queen*, should have their points pinched off the moment they reach the tops of the sticks, and rather a little before. Those who depend upon young plantations of *Strawberries* for fruit should plant while the ground is moist and the weather favourable. If planted at once and properly cared for until the plants become well established, a fine crop of superior fruit may be expected next season. Where the plants are to stand only one year they should, however, be planted much more thickly than is usually done—say four lines in a 5-feet bed, 29 inches between the plants in the line, allowing a foot of an alley between the beds. See that plenty of plants for forcing next season are potted at once, if not already done. As ground becomes vacant by the removal of early crops let it be manured, dug, and planted with *Winter Greens*, and without loss of time.

FRUIT GARDEN.

Fig trees require much attention at this period; they will in general continue at intervals to produce gouty shoots; these must be stopped or entirely removed, at the same time taking care to tie or nail-in all short-jointed wood which may break. Vines on walls need much attention. See that late-growing spray does not shade the principal leaves; these should invariably enjoy full exposure to the light. The *Currant bushes* should have some of the extremities of the watery and late growth cut away, taking off also a handful or two from the interior of the bush when gross.

FLOWER GARDEN.

The various *Roses* should now receive attention as to good

staking, disbudding, stopping, top-dressing or liquid-manuring, and budding. As regards the latter operation, the principle of ripening the wood should be kept in view. If time is a particular object, the excitable kinds should be put in directly on stocks with a strong root action, and those buds which push in a month or so after budding should by no means be suffered to bloom, but have their tops pinched off when they have produced four or five leaves; they will then solidify their growth before the approaching winter. *Fuchsias* require much and regular watering, and it would be well to apply short and neat mulchings, or sphagnum moss, over their roots. Single specimens recently planted on lawns should receive similar treatment. It is a very good plan with the latter to cut a definite circle or square of turf away, and cover the whole surface 2 inches thick with neat pebbles. This will screen the roots and break the action of the water, which is apt to prove injurious by puddling the surface. All cultivators of the *Ranunculus* should watch the ripening. Take up the roots as the leaves turn yellow, and allow them to dry in the shade. Seedlings in pans or boxes should be placed under cover, and in the course of a few weeks the roots, which are often very small, should be carefully taken out. Some florists allow them to remain in a dry situation till the time arrives to plant in the spring. Cover the blooms of *Carnations* and *Picotees* as they expand, placing cardboard collars beneath them. Layering may be commenced, beginning with the grass or shoots which are most forward. A stone placed over the part which is pegged in the ground will speedily ensure its rooting. As the pipings of *Pinks* root, prick them out in good soil. It will be advisable to pot some in small pots to be sheltered during winter. Cut the seed-vessels off *Tulips*, and lay them up to dry. Trench over the bed intended for next autumn's planting, and prepare the soil necessary to renovate it. Look to *Dahlias*; thin-out where required; stake, tie, and mulch.

GREENHOUSE AND CONSERVATORY.

Those who have borders in which the plants are planted out should see that subjects recently planted-out with balls are duly watered. Indeed, preserving a due amount of moisture throughout the border is a matter that requires some forethought, together with a knowledge of the habits of the respective specimens. The surface of the soil, moreover, should be often sprinkled, if only for the sake of a genial atmospheric moisture. Allow the conservatory-border plants the full advantage of favourable weather, that a compact hardy growth may be produced. Regulate the shoots of climbers, and see that adequate supplies of water are given and insects repressed early. *Azaleas* may still be kept in activity, syringe them daily. Attend to stopping. Some of the stove plants that have recently been brought into the conservatory will require attention to prevent their being injured by damp in cloudy weather, and it will probably be necessary to use slight fires occasionally for the purpose of drying the atmosphere of the house. The propriety of this will, however, greatly depend upon circumstances, for in some well-ventilated houses damp will hardly be troublesome, whereas in lofty houses with but little ventilation and the roof overgrown with twiners, it may be very troublesome. At this season, however, there is nothing to fear from cold, and air should be freely admitted on every favourable opportunity, using every care to keep the atmosphere as dry as possible, and the plants free of decayed leaves and flowers. Continue to carefully regulate the growth of twiners, but avoid tying them too closely; allow them to grow according to their natural habits as much as circumstances will admit.

STOVE.

Encourage the progress of the young stock for winter blooming; maintain a moist and comparatively high temperature. When a fire is necessary here it should be lighted about 1 p.m., be suffered to burn briskly for a couple of hours, and be permitted to go out by four o'clock. The houses may be shut up at five o'clock, and water used in a liberal way. By this means a very sweet and sufficiently warm atmosphere may be preserved during the night without fire heat, which, although a friend in one sense, is a foe in another. An increased circulation of air may be allowed to *Orchids* during bright weather that succeeds a period of gloom; the humidity constantly stagnant will otherwise have an injurious effect.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Very little was done here except in the way of successions, and planting out for winter wherever there was the least

empty space to be found. We dug down Strawberry quarters where the fruit had been gathered closely for preserving, and this gave us a little room. We have had during the week more than conclusive evidence of the want of this room in half a dozen cases, as well as in our own. People may decry the kitchen garden, and hold out that what cannot be grown may be more cheaply purchased than it can be grown; but when the want comes all such sayings are forgotten, and an enlarged company of visitors is supposed to be supplied from the curtailed room, and without any application to the market for supply. It is only lately that some of our readers who had a little villa and a little lawn have come to see the truth of our statement, that a lawn is the most expensive thing in a gentleman's garden. One visiting gentleman, who has a neat little lawn, told us, in opposition to our opinion, that he just looked on his lawn as he did on some of his good paintings and engravings—both were intended merely to please the eye. But we did not consider the analogy perfect beyond a certain point. The paintings and engravings obtained, the eye could be daily gratified with the smallest weekly outlay for care, dusting, &c., but after the lawn was made—which, to be sure, would not quite rival in cost the purchase of fine paintings, but would compare often as to cost with the finest engravings—from that moment the comparison ceased, as to keep it neat involved a heavy weekly outlay. In the end we are assured that the pleasing will succumb to the useful; and even now some young gardeners know to their sorrow that a lawn and a few good plants and flowers, however well managed, will not compensate for the seemingly derided vegetables being short at dining-room and hall. To insure anything like comfort to beginners, there must be no stint in the kitchen. When "old stagers" are put under restraint as regards room, they can generally hold their own, but even they often find how difficult it is to get on with this expressed carelessness of kitchen-garden produce, and then the almost boundless demand when there is a goodly band of visitors at the mansion. Where means and room will at all admit, it is the wisest policy to trust little to such professions of carelessness, and to provide for extremes of supply, and with but a small space this does make a difficulty.

Now is the heyday for Peas and Beans, but other things must not be neglected if we are to have variety, and without variety the best vegetables cloy on the appetite; therefore in small gardens we must use every means not only of successional but of mixed cropping. For instance, our earliest Potatoes out of doors have been on a bank facing the south. Part of that bank had stout Lettuces planted early between the rows, and fine they were; and as soon as these were removed Cauliflower plants took their place after the Potatoes were earthed-up. These young Cauliflowers were shaded with laurel twigs in the tropical weather, and have now taken good hold. The Potatoes, beautifully ripe—the Ashleaf Kidney—were taken up first in alternate rows, thus giving breathing space to the Cauliflowers; and when we turn back and take up the other rows of the Potatoes left, the Cauliflowers will have the ground to themselves, and give us a fine return in the autumn months.

In a day or two we shall dig down a bank of Strawberries, and plant with Veitch's Late and the Walcheren Cauliflower. We found Veitch's very fine last season. We had some fine heads with a little protection at the new year; and talk as we may of other vegetables, a good Cauliflower is an exquisite vegetable after all. Between these Cauliflowers we shall have Radishes and other short-timed crops.

Watering has been done for us by the heavens, and we have never yet had to complain of too much rain, even though continued for long periods, though of course heavy rains, as during the present week, have interfered with our projected purposes and intentions; and when company is expected these deluges interfere with the neatness and finish one would wish to see exhibited in most places. One idea here we would wish to throw out for the benefit of our younger brethren. We would, if not too egotistical, be inclined to put it forward as the golden rule of success under general circumstances. It is simply this—Endeavour to give a favourable first impression to all visitors of the family. Rest assured that the first impression is the lasting one. We have known many cases where a rugged approach, a slovenly entrance, a dirty weedy kitchen garden, marred the effects of fine glass houses and a trim-kept garden of flowers. We cannot always counteract this; but rest assured that the first impression is the lasting one, and that is the impression that will insensibly be made both on the proprietors and their visitors; as respects the former, be

their possessions great or small, it is more pleasant to find that their visitors are pleased than that they are disappointed. We say, then, Study the effect of the first impressions.

FRUIT GARDEN.

We are better off than most people, but still our Apples will not be like those of last season. They dropped in shoals, and from no cause but that of the sleet, frost, and snow to which they were subjected. From heavy crops in continuous years, and a moderate luxuriance, we satisfied ourselves that nothing else was the cause. We have, as respects moderate-sized trees, secured early fertility and constant fruitfulness by a very simple process, and with scarcely any necessity for resorting to root-pruning. We plant on mounds, spread out the roots near the surface, and mulch. Most of our dwarf bush and pyramidal Apple, Pear, Plum, and Cherry trees have, after surface-stirring, a good barrowload of rotten dung, sometimes two, laid on in winter and spring. This prevents excessive dryness in the soil, and encourages surface-rooting. We thus curtail anything like long willow-like growth, but encourage healthy short shoots enough to keep a free growth of short stumpy shoots, the stopping of the points of which makes them fruitful. When once the young trees, by elevated and shallow planting, are made fruitful at an early period, we know of no easier method of continuing the fruitfulness, with a healthy but still sturdy limited growth, than this surface-mulching. It acts in quite a different way from what it would do if dug-in among the roots; then we should expect longer and less-ripened shoots. Once get this plan fairly into operation, and one need trouble himself but little with lifting and root-pruning. If we had a chance we should like to try it fairly with that fine old Apple, the Ribston Pippin. At one time it suffered with us so much from canker, that we had no relief except by replanting or root-pruning, and therefore fell back considerably on its smaller prototype, the Margil, a true Ribston in miniature, but more hardy in most soils. If we could, however, we would try the Ribston on an elevated platform, and give it yearly surface-mulchings. We have strong hopes that then the trees would do well without root-pruning. We have tried root-pruning beneficially in many cases, but as in these days all labour must be saved that is possible, we would rather surface-mulch than root-prune, and for years we have found the benefit of the plan in having trees loaded with fruit, and yet just sufficiently healthy and luxuriant. This season there is something about the foliage indicative of the whole system of the plants having had a violent check from the weather in spring.

We fear that Apricots will be few and far between. Peaches, Nectarines, Plums, Cherries, &c., with a glass protection have set like ropes of Onions. As indicated several times, and as we must allude to more prominently some day, glass protection is ultimately the best and cheapest of all protections; and then how useful such an enclosed space is for securing Endive, Lettuces, &c., in winter and spring, and Peas and Beans before they can be obtained out of doors.

ORNAMENTAL DEPARTMENT.

We love Auriculas, Polyantheses, and the finest Tulips, Pinks, Carnations, Ranunculuses, and Anemones as much as ever; but when so much depends on one person as there does in many places, it is next to impossible that these grand flowers should be suitably attended to. However this may be, we can say with confidence that the man who can show a collection of these florists' flowers in first-rate condition requires quite as much judgment, perseverance, and care as he who shows a splendid collection of stove and greenhouse plants. As for the glorious Auricula, the pets of our boyhood, the chief thing now is to keep the plants in a shady place; if under glass, with plenty of air back and front, all the better, so as to avoid deluges of rain. Remove every faded leaf, top-dress with rich compost, however simple—nothing is better than two-year-old sweet dried cow dung, with a little lime and a good deal of silver sand added a month previously to its being used—and see that water is not wanted.

Polyantheses still more require the shade, and especially if the plants have been divided. The thrips is apt to attack the best kinds if exposed to the sun. A north border is just the place for them in summer if no shade can be conveniently given. Our Pinks are getting beyond their best. We propagate every year; the first season we are content with a few good blooms, the second year we want them, Carnations, and Picotees for bundles of blooms for cutting. We are just now short of the last-named, having unwisely ventured them beyond wall protection, and the result was nothing, owing to

the attacks of four-footed intruders. Nothing secures those grown for cutting like a twisted wire. Of course, were we to show fine specimens, we would single out our dozens of blooms to two or three blooms on a plant. Unfortunately, from want of space, &c., we have been obliged to give prominence to some things in succession. Years ago we detailed how we got literally sheaves of fine blooms from the perpetual Carnations and Picotees, and we had nothing to surpass them in the autumn months, and then the younger plants under the treatment specified bloomed all the winter and spring. If we could, we should like to grow the best of these beauties again, as nothing, especially for cut flowers, could be more lovely. For beds out of doors to be masses of bloom after July and August, we used to turn out strong plants in spring, protecting them from enemies in the usual way. For fine plants under glass in winter and spring we used to nip out the terminal bud of smaller plants in March, turn out into rich stiff soil in April, nip off any flower-buds that showed early, raise the plants with balls, and repot in September, when they were bristling with flower-buds. The four-footed intruders were too many for us at last, and in one night destroyed a collection that it had taken us years to procure.

Anemones, Ranunculuses, Hyacinths, Tulips, &c., as soon as the foliage decays, if good kinds, will be all the better to be raised, gradually dried in the shade, and kept dry afterwards until they are planted. Common kinds may be left in the ground, but even they often do better from having a regular dry rest before planting out.

Many things have been attended to, so as to bring up our leeway. The lawn, taken up and relaid last year, has well paid the labour, but the addition of earth, to take away all irregularities, has made the grass so grow as to require almost constant cutting in this moist weather. The rains have just suited the flower-beds, and more sun is now needed to make them masses of bloom. A dry day or two would enable us to get the edgings into shape, as some have grown too much. Moved plants to corridors and conservatory, repotted successions, and fresh potted Fuchsias, Coleus, &c., for autumn. In dressing out flowers with sprigs of Maiden-hair, we find the older fronds stand the best. We also find that these fronds will stand a long time in damp sand or water by themselves, but only a short time when mixed with other flowers.—R. F.

TRADE CATALOGUE RECEIVED.

Ant. Roozen & Son, Overveen, near Haarlem.—*Catalogue of Choice Hyacinths, Tulips, Crocus, and other Dutch and Cape Bulbs.*

TO CORRESPONDENTS.

* * We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely to The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

BOOKS (R. K. C.).—Sir James E. Smith's "English Botany" costs £25. The plates are coloured. Another work illustrating the wild plants is "The Wild Flowers of Great Britain," published at our office in monthly parts at 1s. (C. B. L.).—Dr. Masters' "Botany for Beginners" is the best you can have. (J. Richmond).—"Notcutt's Handbook of British Plants," is the most concise and cheapest. You can have it sent from our office for 8s. 8d. in stamps.

GRUBS EATING GRAPES (J. A.).—The grubs you have enclosed did not cause the damage to your Grapes. They are scalded, and require to have more air given them, and the border protected from too much wet. The caterpillars had nothing to do with it.

GRAPES SCALDED (C. F.).—Your Grapes are scalded. Give more air, and protect the border, if possible, from excess of moisture.

GRAPES CHANGING COLOUR (A. M. R.).—We never heard of Black Hamburghs after they had acquired their full colour change to a lighter. The Green Rose is not common, and we should like a few buds.

BUDDING MANETTI ROSE STOCKS (Mon).—If the Manetti stocks are large enough you can bud them; if not large enough, let them remain till next year. The buds should not be inserted in the shoots of the current year; put them into the stock. Bud as low as you can—as near the roots as you can. You may bud below by scraping the soil away, or above the soil. The bud should not be more than 4 inches above the roots. You should not hoe the

earth over the buds. If a severe winter set in you may put on a little litter, but not so as to exclude the air from the buds. There is a vast difference between Manetti cuttings planted in the fine soil of a nursery and those planted in general grounds. I saw at Mr. Keynes's in August, 1860, some cuttings put in during the previous September. They were mighty bushes; some of the wood as thick as my finger, and some of the plants from 3 to 4 feet high.—W. F. RADCLYFFE.

NAMES OF ROSES (G. Strickland).—4 is Souvenir de Malmaison, and the other somewhat similar in colour to Gloire de Dijon; but we cannot undertake to name florists' flowers. (C. Z.).—Your Moss Rose is the White Bath. Any nurseryman can supply it.

ROSES FOR WALLS (Kent).—Put on your south wall any of these—Maréchal Niel, Céline Forestier, and Gloire de Dijon at not less than 10 feet apart. They are yellow Roses, sweetly scented, and good and constant bloomers. For coloured Roses, put Charles Lefebvre, crimson; Empereur de Maroc, maroon; Souvenir de Malmaison, blush; John Hopper, reddish rose; Felix Genero, reddish rose; Duc de Cazes, purple crimson; Madame Victor Verdier, rich red; Duke of Edinburgh, brilliant scarlet; Edward Morren, light crimson; Lady Suffield, rosy purplish crimson; Baronne de Maynard, pure white. On your opposite wall put Sir Joseph Paxton, light crimson; Acidale, white; Madame Charles Crapelet; Souvenir de Dr. Jamain, maroon; Jules Margottin, light crimson; Baronne Prevost, rose; Marguerite Bonnet, tinted white, and very beautiful; Achille Gonod, light crimson; Madame Charles Verdier, soft silvery rose; Gloire de Ducher, lake red; Léopold II., brilliant scarlet rose. For clay soil the Briar is the best stock.

MANETTI-STOCKED ROSES FOR SANDY SOIL (R. Davies).—At page 47, for Vicomtesse de Cazes, read Vicomtesse de Vézins.—W. F. RADCLYFFE.

CHERRY TREE UNFRUITFUL (G. A.).—The cause of the unfruitfulness of your Cherry tree is no doubt due to the cultivation of the border in which it is planted. The tillage necessary to grow Potatoes upon it keeps the roots of the Cherry from reaching the surface, and, their action being impaired, the fruit is not perfected.

GOOSEBERRY CATERPILLAR (C. A. S.).—The only safe present remedy is hand-picking. In the autumn cover the surface of the ground round the bushes 2 or 3 inches thick with spent tan from the tanyard, and leave it there till spring, when you may dig it in, and you will find no more caterpillars.

YEW HEDGE (H. T.).—We would recommend you to leave the Yew hedge as it is till next spring, and then cut it down. It will not suffer in the least by being cut down to 6 feet, but will, on the contrary, be much improved by the operation.

AIR ROOTS ON VINES (H. A. B.).—There is little doubt that the cause of air roots on Vines is a deficiency of power at the root. Were the root in a healthy condition these air roots would not be formed. Being there, they are not injurious in themselves, though they indicate injury at the root, and rather assist to nourish the leaves and fruit with food which they do not derive in sufficient quantity from the root. You had better in autumn examine your Vine border and bring the roots of the Vines to the surface, giving them some fresh soil and a good top-dressing.

GAS STOVE (Stafford).—We cannot possibly give you the cost of a gas stove per week, as that will depend upon the price you pay for your gas and the quantity you use. We have had no experience of Clarke's gas stove.

ORCHID-HOUSE AND CONSERVATORY ARRANGEMENT (Beginner).—The shade from the morning sun will do no harm to your Orchid-houses, and we quite approve of your proposed arrangement. The group of houses will be more artistic, and look better than if Orchid-houses and conservatory were in the same line.

GREENHOUSE ASPECT (Mrs. Bain).—None of the aspects referred to are so good as a south one, as that may be shaded if wanted. We should prefer the aspect that enjoys the afternoon sun to that only exposed to the morning sun.

HEATING (W. M.).—A pipe with an inch bore will answer; but no doubt if you could employ an inch and a half it would be better.

ORCHARD-HOUSE AND VINERY BORDERS (H. G.).—As you are so near gravel and water, the simplest mode would be to make your inside and outside borders above the ground level. If you can fill the space between the ground level and the subsoil gravel and water with rubble all the better, and if the soil were at all fair we would mix that with the new loam, &c., to form the border. But for the expense, however, we would rather have all fresh loam, though such is not absolutely necessary. The arches in the front wall are all right, but we would have none in the back wall, otherwise the Morellos Cherries you plant on the north side of the back wall would soon rob the trees inside. For that wall Apricots will do, if you do not use much artificial heat. They require great care then. Peaches would be more easily managed, as they stand more fire heat than the Apricot.

GREENHOUSE LILIES (J. W. Bond).—You may put the Lilies out if you require the room, but not necessarily. Do not disturb them in the pots, only top-dress them; or if they require larger pots shift them without disturbing the roots. The drying of the soil did not affect the germination of the seeds. They must be imperfect or old.

ACHIMENES CULTURE (G. B. R.).—Your system of managing Achimenes is good. Pans are good, but pots, too, do well. The plants are covered with thrips. Several early smokings with tobacco not overstrong, and syringing with clear soft water at 100°, might have cured them. You may do so now, but from the forwardness of your plants it is rather late, and we should be more anxious about the tubers for the future.

ONIONS FOR AUTUMN SOWING (St. Edmunds).—Giant Rocca and Tripoli Flat Italian Red, White Italian, and Globe. They should be sown from the 10th to the 15th of August.

GATHERING RHUBARB LATE (A. E. F. C.).—It is not advisable to gather Rhubarb after the middle of July, but as this is a late season you may safely take what you require for preserving, leaving, however, to each root a good number of stalks untouched.

PLANTING STRAWBERRIES (F. J.).—You must plant at once, so as to secure a good crop next year. If you have the plants by you we should advise you to layer the runners in small pots, and when well rooted plant them out 2 feet apart every way. The ground should be well trenched and manured. Water at planting, and in dry weather until established. Sir Joseph Paxton, President, and Dr. Hogg, are excellent sorts succeeding each other. Plant as soon after this as you can procure runners. For the cuttings of Geraniums it is not necessary to more than dig the ground, and then put on from 4 to 6 inches of soil, which should consist of light loam two parts, and equal parts of leaf soil and sand. Put in the cuttings about 2 inches apart. The more sunny

and open the situation the better. The oil-cask you are about to convert into a water-barrel we should char by placing in it a good armful of straw, firing it, and whisking it round until consumed. This will tend to keep the water sweet, and preserve the wood.

FORCING RHUBARB (*A Constant Reader*).—Probably you have some good strong roots of the plants you wish to force, and if so there will not be any difficulty, but without such you will not succeed. The stronger the roots are the finer will be the forced Rhubarb. We should form a border on each side of your dark shed, leaving the pipes exposed. A board 11 inches deep will answer well; all you require is something to keep the soil from the pipes. In this case you will have two borders, each 3 feet 6 inches wide, and they will hold two or three rows of roots according to size. Taking up the roots in November or December with all the fibres you can, and soil adhering, place 8 inches of good rich soil at the bottom of the border, then set the roots closely together, and fill the space between and around them level to the crown with rich soil, giving a gentle watering. When the stalks begin to appear water with weak liquid manure heated to the temperature of the shed, which should be from 50° to 55°, and, after they are a few inches high, of 55° to 60°. In this temperature about a month will be required from placing them in a house until the stalks are fit to gather. You can put in the roots in one border at a time, and in the other in from a fortnight to three weeks. In this way you can keep up a succession.

AZALEAS (*Julia*).—Your Azaleas are attacked with thrips, syringe them with a solution of Gishurst compound, 2 ozs. to a gallon of water.

RAISING FERNS FROM SPORES (*Waterloo*).—We should have advised you to have made a small glass-case, or a small frame with lights, say 4 feet long and 2 feet wide, sides of wood about 10 inches deep, and the ends also wood, and to have the lights with a fall of about 1 foot. We would have the house span-roofed, one side to be fixed and the other opening with hinges. This frame will save you much trouble in covering the pots or pans with bell-glasses, for the pots will need to be covered with these if you do not employ a close frame. Drain some pots or pans half their depth with crocks, and fill-up to within half an inch of the rim with the rough portions of sandy peat two parts, one part turfy loam (yellow loam is best), one part freestone or grit broken-up small, and another of silver sand. The peat and loam should be broken-up small. After mixing the whole together it must be sifted through a quarter-inch sieve, and the part that passes through is to be used for filling the pots to the rim, and the rough for the remainder of the space. The whole is to be pressed rather firmly, and when complete give a good watering through a fine-rosed watering-pot; repeat this two or three times. Let the pots stand a night, next day water again, then scatter the spores evenly on the surface, and at once cover with a bell-glass just fitting within the rim. Stand the pot in a warm, moist, close, and shaded part of your fernery, and if set in a saucer keep it full of water. You will need none on the surface; it is well to avoid surface-watering for a time at least, and if any water is there needed it must be given through a fine rose. The surface should always be kept moist. When it begins to green a little, air may be given by tilting the glass about the eighth of an inch on one side, and when the young Ferns are an inch high air may be admitted more freely, tilting the glass more, and removing it altogether when they are fit to handle, say when they have made two or three fronds. Then they may be potted-off singly, and grown in a close moist atmosphere. Should you have the case, or frame, all you have to do is to place it in a close and moist part of your house, put in an inch or two of sand or fine gravel, and set the pots on it, having previously given the sand or gravel a thorough wetting. The light should be put down close, and you will only need to look in occasionally to see that the surface of the soil is moist; when needing water give a gentle sprinkling overhead. The frame must be shaded from bright sun. Air will need to be given as described for the glasses, and when the Ferns are potted-off the frame will be a suitable place to set them in for a few days until established.

INSECTS (*L. Black*).—The insects sent, found in numbers in your Pine stove, are an exotic species of millipede (*Julus* sp.). They eat vegetable matter, the young fibres of roots, &c., both growing and decaying. They may be trapped in great numbers by burying slices of Potatoes, which should be looked at and scalded every morning. (*T. A.*)—The insect sent with the Holly and other leaves is the dark green caterpillar of a small moth, one of the Tortricidae. We know no better remedy against the creature in its present state than careful hand-picking. When the moths appear they should be sought after and killed.—*I. O. W.*

NAMES OF FRUIT (*Dr. Mackenzie*).—The fruit sent appears to be Early Anne, an old and indifferent early variety. We quite sympathise with you in your disappointment in receiving such a variety for Noblesse.

NAMES OF PLANTS (*R. M.*).—Send a larger sprig of the Ivy, as it is impossible to tell what it is. The Daisy is the common one, *Belis perennis*. (*S. J. H.*)—*Campanula carpatia*. (*B. P.*)—*Aspidium* (*Cyrtium*) *falcatum*; *Asplenium*, probably *flaccidum*, but it is too young to decide upon. (*C. T.*)—1, *Oxalis Deppei*; 2, *Agrostemma coronaria*; 3, *Orobanchis*; 4, *Pipera callosa*; 5, *Cistus coriariensis*. (*A. T. W.*)—*Stachys lanata*. We do not know what extent of bee pasture it affords. (*Boveram*).—*Polygonum aviculare*, Knot-grass. (*W. Nock*).—Your Fungus is *Phallus impudicus*.

POULTRY, BEE, AND PIGEON CHRONICLE.

FORTHCOMING POULTRY SHOWS.

BIRMINGHAM SUMMER SHOW.

In answer to numerous applications, I beg leave to state that I am not connected with a July Show. I believe the announcement to be an error, and that our late June Show is the one meant.—*F. F. FOSTER*, 101, *New Street*, Birmingham.

[We always endeavour to supply as correct information as possible with regard to forthcoming poultry shows, with a view to promote their success, as well as the extension of poultry keeping, and because we have good reason to know that the list we furnish from week to week is much consulted and relied on by poultry-keepers, whether exhibiting or non-exhibiting. But we regret to find that in our endeavour to make our list as complete as possible, we have in one or two cases been misled by

incorrect information. In future, therefore, we cannot insert in our list of fixtures any but shows which are either advertised in our columns, or of which we have official information from the secretaries. For the insertion of a show in our list we make no charge, and therefore it is committees' and secretaries' own fault if their shows do not appear in it.—*ENDS.*]

OUNDLE POULTRY SHOW.

This Show was held on the 12th inst., and, so far as the entries were concerned, was quite in advance of all previous Oundle meetings; the day, however, broke in such a way that few visitors could be expected from a distance, for early in the morning thunder, lightning, and occasional heavy storms prevailed. Up to about three in the afternoon of the Show-day nothing could look more unpromising, but at that hour a most favourable change took place, and the grounds were at length well filled with visitors, bright sunshine adding much to the pleasure of everyone interested in the proceedings. The Committee had wisely provided a most excellent tent, and the pens of Messrs. Turner were ready long prior to the general reception of the birds sent for competition. All the poultry received ample attention, and not a single bird was a sufferer from the unfavourable weather.

In the Grey Dorkings the hens were preferable to the cocks, most of the latter suffering more or less from enlarged feet. The hens and pullets were very large and well-matured specimens; but a somewhat general failing prevailed—viz., "sooty" legs and feet, a very great drawback in competition. Mr. Longland, of Grendon, was successful with two pens of well-selected Dorking pullets of excellent quality for so early in the season. There were some very good pens of *Game* fowls shown; but a few of the very best of the Black Reds, viewed only as fighting fowls, were here thrown quite out of competition, from having the dark eyes of the Brown Red variety. "Crossing" the colours in the stock birds, admittedly gives produce of increased power and endurance for the cockpit, but as certainly prevents success in the show-pen. It is somewhat unusual to find anything like so good a display of *Spanish* at this season, eight pens of hens shown of this variety were such as can but very rarely be seen together. The cocks and young birds of this breed were also of great purity, and shown in first-rate condition. *Cochins* were good, but not in show trim. In *Brahmas* (an open class), Light-feathered were first, and Mr. Ansell's well-known Dark second. The latter birds ought now to rest, for continual exhibition has robbed them entirely of condition, and their constitution is now seriously affected. Mr. Yardley, with a dark pen, was a very close third. There were some good *Hamburgs*, and capital Silver-laced *Sabreight Bantams*.

The Aylesbury and also Rouen *Ducklings* were most creditable, and a pen of the old-fashioned top-knotted White Ducks, at once ornamental and useful, were the prizetakers in the variety Duck class. Some extraordinarily fine *Turkeys* and *Geese*, fit to hold a place at any meeting, were shown, and a pair of beautifully fine-feathered Canada *Geese* were much noticed by visitors.

The *Pigeons* were as good as could be desired, but the entry was very limited.

In the *Rabbits* an owner thoughtlessly committed a first-class doe to a very close-fitting box, with a few holes bored in the lid; during transit another box placed on the top hermetically sealed her package, and as a matter of course, death at once ensued.

DORINGS.—Hen.—1 and 3, R. Wood, Clapton. 2, J. Longland, Grendon-c. Rev. E. Bartram, Berkhamstead. Pullet.—1 and 3, J. Longland. Hc. R. Wood. Cock.—1 and 2, J. Longland. 3, J. White, Warbury, Northallerton. Hc. L. Wren, Lowestoft. Cockerel.—1 and 2, J. Longland. Hc. O. E. Cresswell, Early Wood. c. Rev. F. L. Salisbury, Market Overton.

GAME.—Hen.—1, B. Cox, Moulton. 2, H. Lotan, Oundle. 3, J. Love, Kingsthorpe. Pullet.—1, J. Nash, Walsall. 2, B. Cox. Cock.—1, H. E. Martin, Sculthorpe, Fakenham. 2, W. Speakman, Doddington Park. 3, T. Whitaker, Melton Mowbray. Cockerel.—1, B. Cox. 2, J. Gregory, Apethorpe.

SPANISH.—Black.—Hen.—1, Pickering & Duggeby, Driffield. 2, J. Nash. Hc. W. R. Bull, Newport Pagnell; Nichols Bros., Camberwell. The whole class commended. Cock.—1, Nichols Bros., Camberwell. 2, H. Yardley, Birmingham. Hc. W. R. Bull, Pickering & Duggeby. Cockerel and Pullet.—1, W. R. Bull. 2, J. F. Dixon, Cotgrave. 3, T. Hutton, Buckingham.

COCHIN-CHINA.—Hen.—1, R. S. S. Woodgate, Penbury, Tunbridge Wells (White). 2, H. Lloyd, jun., Ivy Cottage, Han'sworth (Buff). 3, L. B. Calcott, Oundle (Buff). Cock.—1, H. Lloyd, jun. (Buff). 2, J. W. Taylor, Low Mills, Ulverston (Buff). 3, H. Yardley (Buff). Cockerel and Pullet.—1, P. Passmore, Northampton (White). 2, J. Nash (Partridge). 3, J. Longland (Buff).

BRAHMAS.—1, M. Leno, Markyate Street (Light-feathered). 2, T. F. Ansell, Cowley Mount, St. Helen's (Dark). 3, H. Yardley (Dark).

HAMBURGHS.—Gold and Silver-pencilled.—1, W. Speakman. 2, W. K. Tickner, Ipswich. 3, J. Nash, Walsall. Gold and Silver-spangled.—1, L. Wren, Lowestoft. 2, T. Love, Kingsthorpe. 3, H. F. East, Bay View, Swansea. **BANTAMS**.—Game.—1, J. Ingram, Gilephorpe. 2, H. P. Price, Castle Madoe, Brecon. Any other Variety.—1 and 2, M. Leno, Markyate Street. Hc. R. H. Ashton, Mottam.

ANY OTHER VARIETY.—1, W. Bearpark, Ainderby Steeple (Silver-spangled Polands). 2, W. Dring, Faversham (Hondans). 3, W. Cullack, jun., Littleport (Black Hamburgs).

SELLING CLASS.—1, H. Yardley (Black Spanish). 2, L. B. Calcott, Oundle. c. Rev. E. Bartram, Berkhamstead (Grey Dorking).

DUCKS.—Aylesbury.—1, T. Sears, Tingewick. 2, S. Deacon, Rouen.—1 and 2, R. Wood, Clapton. Any other Variety.—1, H. Yardley (Poland). 2, No competition.

TURKEYS.—1, J. B. Underwood, Warrington. 2, M. Kew, Market Overton. *hc*, Mrs. Baker, Barnwell Mills.

PIGEONS.—1 and 2, H. Yardley (Almonds, Black and Yellow Barbs, Dun Carriers, Tintrettes, and Blue Pouters).

RABBITS.—*Heaviest*.—1, W. Smith, Oundle. 2, H. P. Wakefield, Thrapston. *Lop-eared*.—1, J. E. Palmer, Peterborough. 2, R. H. Wakefield. *hc*, W. Smith. *Fancy Variety*.—1, T. Adams, Northampton (Angora). 2, W. Smith (Himalayan). *hc*, C. Tassell (2). *c*, T. Love, Kingsthorpe; W. G. Hancock, Northampton.

Mr. Hewitt, of Sparkbrook, Birmingham was the Judge.

RABBITS AND CAGE BIRDS AT BOSTON POULTRY SHOW.

We append a list of the awards in these classes, as it did not arrive with the rest of our report published last week.

RABBITS.

LOP-EARED.—1, H. Caswood. 2, J. E. Palmer. *hc*, A. H. Easton. *c*, J. E. Palmer; F. Pocklington.

BELGIAN HARE (or any other pure breed).—1, H. Dykes (Silver-Grey). 2, E. S. Smith (Belgian Hare). 3, A. H. Easton (Himalayan).

HEAVIEST.—1, F. Hildred. 2 and 3, M. Taylor.

CAGE BIRDS.

GREY PARROT.—1, J. S. Harrison. 2, — Ross. *hc*, C. P. Gibson; — Spikins. *Variegated*.—1, Miss Jenkins.

PARROQUET OR LOREY.—1, — Swann. 2, H. Dykes.

CANARY.—1, J. H. Thomas. 2, G. N. Harrison. *hc*, W. Caister, jun. *Mule*.—1, H. J. Waite. 2, Mrs. Bailey. *hc*, J. S. Cater; G. N. Harrison; T. H. Dows. **LINNET, GOLDFINCH, OR ANY OTHER ENGLISH FINCH.**—1, G. N. Harrison. 2, G. Scates.

LARK.—1, T. Hobster. 2, J. T. Muschamp. *hc*, B. Dobson; J. T. Muschamp. **THRUSH.**—1, D. Hayes. 2, J. Brewer.

BLACKBIRD.—1, W. A. Johnson. 2, J. Queenborough.

RABBITS AND CATS AT THE SCOTTISH METROPOLITAN SHOW.

At this Show there was the most numerous and valuable collection of Rabbits ever collected at Edinburgh. Mr. Billett, naturalist, of Southampton, had the management of the Exhibition, and his arrangements were all that could be desired as regards the size of the pens (2 feet 6 inches), the feeding, and the general comfort of the specimens, some of which were four hundred miles from home. One fact seems to have been proved by this Exhibition—viz., that a very small portion of the Rabbits—not one-tenth, were from Scottish exhibitors, nor, we believe, was a single prize awarded to any exhibitor north of the Tweed. We state this merely to show that fancy Rabbits have not as yet been reared in Scotland as pets to any considerable extent, but we have no hesitation in saying that from the interest taken in them during the two days of the Show, more than one observer would add some of the varieties to his stock. It was gratifying to find that all the varieties were represented and classified in the most varied manner.

The Lops were arranged in five classes, each containing some of the best specimens ever exhibited, and on looking over the prize list little requires to be said as to their respective merits. The thirty Lops were specimens of great value, with the desirable length of ear (some nearly 23 inches), almost perfection in marking, of large size, and of symmetrical shape.

All the other classes were represented by good specimens; for instance, the Angoras were "well woolled" in most instances, and one or two very large. They were well prepared for exhibition, and beautifully clean. The Himalayans were quite equal to what we generally see, and some, probably, a little beyond; as were also the Dutch—some of them of a clear-bright colour, with the requisite markings of white. The Silver-Greys were perhaps not so large in some instances as they have been seen before; yet they possessed all the essentials of the breed, and were very general in the silvering, and this, in our opinion, is very important. We regret that more Belgian Hare Rabbits were not brought forward to compare with the splendid specimens of Mr. Irving, of Blackburn. The Any other variety class contained some fine Patagonians, and the first-prize Rabbit was of great size. The second prize was awarded to a Silver Cream, and the third to a pretty Siberian. A Polish Rabbit was also shown by the same exhibitor.

The Rabbits were, with one or two slight exceptions, in excellent health. The longest-eared Rabbit was 22½ inches by 4½, and some others exhibited were of almost equal length by painless measurement. Here we may remark that great praise was due to Mr. J. M. D. Brown, to whom the inhabitants of Edinburgh are indebted for the Show, which was projected and carried out in little more than a month.

SOME 172 Cats were entered in forty-seven classes. The arrangements made for them were comfortable, each Cat having a pen about 2 feet 6 inches square; and a scarlet cushion with blue tassels imparted a clean and happy look to the inmates, who were supplied liberally with food and new milk. We need not say they excited much interest, especially amongst the ladies. In judging, great consideration and care were exercised, and many special prizes were awarded. Most of the specimens were local, yet some were forwarded from the south

of England and other parts. The heaviest animal exhibited weighed 20 lbs. The exhibition of Cats was a great success. We published the awards and names of the Judges last week.

BEE MANAGEMENT.

THE letter from which you published extracts on the 6th June last, showing a convenient mode of forming guides to frames, and an easy means of imparting warmth to a chilled stock and expelling dampness from it, originally appeared in the "English Mechanic and World of Science," on December 29th, 1871.—[The source from which it was derived was duly acknowledged.—Eds.] The sketch of the knife-guage was given by me because I thought it an excellent thing for the purpose, and that it might be of service to amateurs. Your correspondent "Novice" gratuitously says it is not new, and I shall not quarrel with him on that score, for nothing is new under the sun. I wonder "Novice" is "staggered" at the warming apparatus for winter; his witty brain could surely have invented something more like it than the poor countryman's hot stones in summer—something, indeed, that would have been as much superior to it as his zinc guage is to my steel one, for it is as easy to invent a thing after someone else has published it as it is to prophesy after an event has happened. "Novice" does not give one single reason why the thing ought not to answer, but contents himself with ridicule, and loftily proposes "the destruction of the few remaining bees." But killing is not curing; and killing in my case would have lost me the services of a valuable Ligurian queen, as well as the "few remaining bees," which this spring led off a very fine swarm for which I readily obtained two guineas; the hive also threw off a cast, which is now filling two bell-glasses. I raised several queens from the cells in the hive, and the few remaining bees are now filling a Woodbury super.

"NOVICE" talks of autumn feeding, a matter which I perfectly understand; and if he understood it half as well he would know that autumn feeding is in many cases the cause of dysentery. The case I alluded to was one in which no autumn feeding had been required; and was rather puzzling, as the bees were in a hive with straw-panelled sides and top, and ought not to have required extra ventilation. Can "NOVICE" suggest the cause of dysentery in that hive? and can he suggest a better means of cure than that which succeeded so well not only in that case but in several others? Dysentery is a disease which does not discover itself until a great deal of mischief has been done, and dead bees and filth at the mouth of the hive do not always indicate the extent of the evil. No matter how caused, if dysentery exists what is the best remedy? Simple syrup, so say the bee books; but they do not tell one how to make bees take it with the thermometer at 19°, nor do they tell one that dead and fetid bees up in the combs are the main causes of the continuance of the disease.

My invention is not for sale; it was offered to the public through the "Mechanic" gratis, as a machine my experience could vouch for as invaluable to a bee-keeper at his wit's end.—C. N. ABBOTT, *Hamwell, W.*

FOUL BROOD.

I HAVE to report a case of foul brood in the only hive I keep. The hive was a large wooden box, containing eighteen frames, and had a Ligurian queen at its head. Last summer the population was very strong and filled the hive. I was about to leave home for two months, and I attempted to make an artificial swarm. I removed the queen and some four or five frames, leaving, as I thought, plenty of worker brood. I noticed that the bees built drone comb only, and I examined the hive along with a well-known bee-master in Edinburgh. We found royal cells, but all tenanted by drones. I then put in worker eggs, and left home; when I returned the old hive was empty of bees. The new hive looked pretty well. I saw no signs of foul brood. This spring, however, the increase of bees was very small. I fancied it was the cold weather, but in the middle of May an examination was made, and foul brood was discovered. I took away all the comb, gave the bees fresh frames, and put them into a clean hive for a week. They made, during this week, a bit of comb the size of a walnut. I then put them into a unicombed hive with a fresh frame, and a bit of clean old comb which had not been near the bees. At first they were active, but they gradually became weaker and weaker. I sent the hive to a friend, a well-known bee-master, and foul brood is worse than ever.

I cannot account for this outbreak; there were no bees near mine, as far as I know; they had two removes into clean hives, and yet they carried it with them. I attribute it in some way to the attempt I made to make an artificial swarm, but the bees wintered well, and there were a good number of bees this spring. Can any of your correspondents give their opinion as to how this has been brought about? I have now handed over the

queen to a well-known bee-master in Edinburgh, who will experiment with her.—F. M.

OUR LETTER BOX.

SNATH AGRICULTURAL SOCIETY'S SHOW.—A correspondent informs us that Mr. R. Leggett, Thorne, took the second prize for Lop-eared does at Snath, and not Mr. S. Ball.

DORKINGS SNEEZING—HEN WITH ENLARGED CROP (B. C. T.).—Such visitations are frequent when we have sudden and violent changes of weather. If neglected they end in roup. Where camphor is freely used it generally overcomes the visitation, and if there be much wet, and their places are damp and muddy, we always find our chickens are helped by having bread and ale once or twice per day. We presume you mean in the hen's case that the crop hangs down. That is more frequently caused by overdrinking than overeating. You must confine her. Begin with a good dose of castor oil—a full tablespoonful, and then feed with a very small quantity of soft food three or four times per day, allowing no water to stand by her, but giving her the opportunity of drinking three times per day.

ANDALUSIANS (St. Edmunds).—We believe you will find that to keep a good yard of Andalusians you must hatch a great many chickens, and eat a great number of them. Your experience will not, however, always be as unsatisfactory as it is this year.

GAME BANTAMS' SPURS (J. H. L.).—So far from its being necessary to cut off the spurs of a Game Bantam intended for exhibition, it would be a great disadvantage if it were done.

COCHIN COCK LOSING HIS FEATHERS (C. S. S.).—You do not tell us whether your fowls are at liberty or not. The bare neck is caused either by hens picking the feathers or from moulting. When at liberty fowls do not pick each other's feathers, nor do they in the spring. It is at this season, when the plumage is worn out, and when the approach of general moulting causes slight discomfort and indisposition, that a craving seems to arise in fowls kept in a confined space for something they can only find when at large. The nearest approach to this desideratum would seem to be the plumage of their companions, and they accordingly attack it mercilessly. If the cock you mention is with hens, and if his neck is bare without appearance of stubs—precursors of the new plumage—it is fair to infer the hens eat them; remove him, and rub the neck with some sulphur ointment. If the part destitute of feathers is covered with stubs, a little patience will prove to you that you have no grounds for uneasiness. The hackle often falls before any other part of the plumage shows any sign of changing.

MARKING CHICKENS (Lemon Buff).—You may mark the chickens at any age when it is necessary, but the younger they are the larger the holes should be made. The needle should be put in and worked about till the hole is of a good size. In chickens two months old it should be very large, as, during the four months' growth that remains to them, the reparative process is very active. Where it is thoroughly done we have never known it to wear out. You can, however, if you prefer it, punch out a piece of the web with such a punch as you use for making holes in a stirrup-leather. In all cases the younger the patient the larger the perforation should be.

LIGHT BRAHMA EGGS PRODUCING DARK CHICKENS (S. B. S.).—There is not the slightest doubt that the birds are crossed. The explanation is an easy one. You say out of sixty chickens you have twelve perfect. They are only so in appearance. They may possess all the points named in the advertisement in rare perfection, but in all probability their produce would be as faulty as that you complain of. If any other proof were needed you have it in the brown feathers. They have at some time been crossed with the Dark.

FOWLS DYING (M. D.).—We fear your fowls are too fat. Circulation of every sort is thus impeded, and digestion becomes impossible. We have no doubt the swelled crop is caused by the closing of the passage between that and the gizzard. The only cure is to withhold food for a time, except in very small quantities. For some days discontinue the maize, soaked bread, and kitchen refuse. Feed sparingly in the morning with barley meal, at midday a little whole maize, a scanty evening repast of barley meal slaked as in the morning with water. Keep the broken abscess well cleansed with a sponge and water. It will heal as soon as the discharge ceases. Use some healing ointment. If the wound is large, draw the lips of it together with coarse thread, and rub the suture with some stiff grease.

POULTRY FOR CONFINED SPACE (C. A. G.).—Cochins, Brahmas, Spanish, Crève-Cœurs, and Houdans all do well in confinement. The first two are the only sitters in the list. The others are only egg-producers. Adult fowls do not suffer from rats, nor do they fear them. We think the Brahma will suit you best. Guinea pigs are no protection from rats. Rats will kill and eat them.

EXHIBITION DARK BRAHMA MOULTING (W. T.).—Separate the cock from the hens for a time. Feed on barley meal or ground oats slaked with water, and give him lettuce every day. Your food is in a great measure the cause of his early moulting. Buckwheat and Indian corn are both very fattening. The former has a tendency to make soft feathers: neither of them are good for plumage. We think you will do well to give him a good dose of castor oil, and you need not fear that he will die of starvation, though you withhold that which you believe to be his favourite food, and though you discontinue feeding him by hand. If the worst happen, exhibit him as he is at the time of the show. The judge will form a proper opinion of his merits apart from disadvantages. We offer you no cure for wing-flapping. We admire it as much as a lusty crow. Both are good signs.

SICK PIGEON (W. A.).—Your Pigeon seems to have taken cold, probably from the wet. Oats are most unsuitable food; give peas, or fares, or Indian corn. Dust flowers of sulphur among the feathers to cure the lice. With better food and warmer weather you may expect a cure.

YOUNG PIGEONS DYING, &c. (P. J.).—This has been a very bad season for fancy Pigeons; we never had so many die in the hatching, or soon after. The general belief among fanciers is that canker is fatal to young birds. You can try dressing the mouth with a strong solution of alum twice a-day, using a camel's hair brush.

PLUMAGE OF BARBS (J. C.).—Feeding has nothing to do with plumage in Pigeons. Of course we do not mean that a half-starved bird will look in any respect as well as a full-fed one; but we mean that if good nourishing food be given, it matters little whether it be peas or Indian corn. Perhaps, as with a horse's coat, beans may give a little gloss. But next, birds in confinement can never have the perfect close-lying feather which Pigeons have that

fly. We apprehend that your trouble does not arise from either of the above sources, but from your birds having come from those which were not of the same colour. Barbs should be bred black to black, yellow to yellow; but fanciers have striven so much for head, eye, and bill, that colour has been damaged by cross-pairing. Hence your bird's flight feathers are tinged, and your other troubles have arisen. Match the blackest birds you have, or get a new strain.

METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	A.M.				IN THE DAY.						Rain.
	Barome- ter at 320 and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Tem- perature.		Radiation Temperature			
		Dry.	Wet.			Max.	Min.	In sun.	On grass		
1872.	Inches	deg.	deg.		deg.	deg.	deg.	deg.	In.		
July											
We. 10	29.928	63.3	58.5	W.	62.4	75.7	50.5	120.2	50.4	0.110	
Th. 11	29.885	66.2	63.9	E.	63.2	83.2	58.2	126.2	56.8	0.062	
Fri. 12	29.943	68.4	60.8	S.W.	64.6	76.2	59.1	124.7	58.2	—	
Sat. 13	29.852	60.0	58.5	S.	63.3	69.2	54.2	109.2	53.0	0.122	
Sun. 14	29.877	61.0	56.4	N.W.	61.9	71.6	51.9	121.6	53.3	0.100	
Mo. 15	29.917	57.4	55.9	N.W.	61.8	64.2	56.3	121.2	56.3	—	
Tu. 16	29.939	65.7	57.7	N.W.	60.3	77.8	48.2	125.8	48.0	—	
Means	29.906	63.2	58.8		62.4	74.0	54.1	121.3	53.3	0.394	

REMARKS.

- 10th.—A very fine day throughout, and equally fine night.
 11th.—Rain in early morning, thick though fair till noon, then fine, gradually clouding over and getting more stormlike till 3.30, when thunder and lightning began, and continuing more or less till midnight.
 12th.—Very fine all day.
 13th.—Fine early, but raining at 9 A.M., thunder between 11 A.M. and 1 P.M., heavy rain for short time from 2.45, and thunder at intervals till 5.30 P.M., then fair.
 14th.—Fine in early morning, but clouding over by 10 A.M., continuing so, and showery all day, very dark between 7 and 8 P.M.
 15th.—A dull cold day with occasional slight showers.
 16th.—A splendid day throughout, only clouding over a little for a short time between 5 and 6 P.M.
 Temperature rather lower than last week, but very near the average. Weather on the whole very enjoyable.—G. J. SYMONS.

COVENT GARDEN MARKET.—JULY 17.

A FAIR supply of both English and foreign fruit is now offered, and finds a ready market at the quoted prices, considerable orders now being received from the northern market for bush fruit. Heavy arrivals of Potatoes, both Kent and Channel Island produce, have much influenced prices during the week. Forty thousand West Indian Pines now on sale; prices range from 1s. to 2s. each.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	½ sieve	3 0 to 0 0	Mulberries.....	£1b.	0 0 to 0 0
Apricots.....	doz.	2 0 3 0	Nectarines.....	doz.	6 0 10 0
Cherries.....	per lb.	0 6 1 0	Oranges.....	£100	8 0 12 0
Chestnuts.....	bushel	0 0 0 0	Peaches.....	doz.	8 0 18 0
Currants.....	½ sieve	5 0 6 0	Pears, kitchen.....	doz.	0 0 0 0
Black.....	do.	5 0 6 0	dessert.....	doz.	0 0 0 0
Figs.....	doz.	4 0 8 0	Pine Apples.....	lb.	3 0 6 0
Filberts.....	lb.	0 0 0 0	Plums.....	½ sieve	0 0 0 0
Cobs.....	lb.	0 6 1 0	Quinces.....	doz.	0 0 0 0
Gooseberries.....	quart	0 6 0 9	Raspberries.....	lb.	4 0 0 0
Grapes, hothouse.....	lb.	0 0 0 0	Strawberries.....	£1b.	1 0 2 0
Lemons.....	£100	8 0 14 0	Walnuts.....	bushel	10 0 25 0
Melons.....	each	2 0 5 0	ditto.....	£100	1 0 2 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	doz.	4 0 to 6 0	Mushrooms.....	potl.	3 0 to 5 0
Asparagus.....	£100.	0 0 0 0	Mustard & Cress.....	punnet	0 2 0 0
Beans, Kidney.....	per 100	1 0 0 0	Onions.....	bunch	4 0 0 0
Broad.....	bushel	8 0 0 0	pickling.....	quart	0 6 0 0
Beet, Red.....	doz.	1 0 8 0	Parsley per doz. bunches	3 0 4 0	
Broccoli.....	bundle	0 9 1 6	Parsnips.....	doz.	0 9 1 0
Cabbage.....	doz.	1 0 1 6	Peas.....	quart	1 0 1 6
Capsicums.....	£100	0 0 0 0	Potatoes.....	bushel	5 0 15 0
Carrots.....	bunch	0 6 0 0	Kidney.....	do.	5 0 15 0
Cauliflower.....	doz.	2 0 4 0	New.....	£1b.	0 1 0 0
Celery.....	bundle	1 6 2 0	Radishes.....	doz. bunches	0 6 1 0
Coleworts.....	doz. bunches	2 0 8 0	Rhubarb.....	bundle	0 8 0 0
Cucumbers.....	each	0 6 1 0	Salsafy.....	£1 bundle	0 9 1 0
pickling.....	doz.	0 0 0 0	Savoy.....	doz.	0 0 0 8
Endive.....	doz.	2 0 0 0	Scorzoneria.....	£1 bundle	0 9 1 6
Fennel.....	bunch	0 8 0 0	Sea-kale.....	basket	0 0 0 0
Garlic.....	lb.	0 8 0 0	Shallots.....	£1b.	0 4 0 0
Herbs.....	bunch	0 3 0 0	Spinach.....	bushel	8 0 4 9
Horseradish.....	bundle	5 0 7 0	Tomatoes.....	doz.	2 0 4 0
Leeks.....	bunch	0 0 0 2	Turnips.....	bunch	0 3 0 0
Lettuces.....	doz.	0 9 1 0	Vegetable Marrows.....	doz.	2 0 4 0

POULTRY MARKET.—JULY 17.

We have had a good supply and a good trade during the past week. As London gets thin the demand will lessen, and prices will be lower.

	s. d.	s. d.		s. d.	s. d.
Large Fowls.....	8 0	8 6	Hares.....	0 0 to 0 0	
Smaller ditto.....	8 0	8 6	Rabbits.....	1 5	1 6
Chickens.....	2 0	2 3	Wild ditto.....	0 9	0 10
Geese.....	6 0	6 6	Pigeons.....	0 9	0 10
Duckings.....	2 0	2 6	Pheasants.....	0 0	0 0
Guinea Fowls.....	0 0	0 0	Partridges.....	0 0	0 0

WEEKLY CALENDAR.

Day of Month	Day of Week.	JULY 25—31, 1872.	Average Temperature near London.			Rain in 43 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
25	Th	William Forsyth died, 1804. Twilight ends, (11.20 P.M.) 9 SUNDAY AFTER TRINITY.	Day.	Night.	Mean.	Days.	m.	h.	m.	h.	Days.	m.	s.
26	F		73.9	49.4	61.9	13	15	41	56	47	20	6	13
27	S		73.7	50.3	62.0	22	16	4	54	7	21	6	13
28	SUN		74.9	50.7	62.8	19	18	4	53	7	21	6	12
29	M		76.4	50.8	63.6	21	19	4	51	7	23	6	11
30	Tu		75.5	49.9	62.7	18	21	4	50	7	24	6	10
31	W		75.2	50.2	62.7	16	23	4	48	7	25	6	7
			74.9	50.0	62.4	15	24	4	48	7	26	6	5

From observations taken near London during forty-three years, the average day temperature of the week is 74.9°; and its night temperature 50.2°. The greatest heat was 92°, on the 25th, 1844; and the lowest cold 34°, on the 29th, 1858. The greatest fall of rain was 1.48 inch.

HARDY GEMS.—No. 1.

UNDER the above heading I beg to offer a few remarks with the view of bringing under the notice of your readers some of the choicest of the many hardy border plants which have been much too readily tossed aside to make room for ribbon beds and borders. The beauties of many of these plants have claims upon our notice which we cannot ignore without detracting much from the pleasure a garden is capable of affording. I trust, therefore, that not only may these brief remarks be found serviceable to some amateurs who already cultivate such plants, but I also hope they will be the means of fostering a taste for them amongst some who have hitherto looked upon them as unworthy of a place in a select border.

SAXIFRAGA STRACHEYI has this spring had its portrait placed in that splendid gallery of art, the "Botanical Magazine," a distinction it richly merits. I have frequently seen this species in bloom, but until the present year could never ascertain its name; and my earnest wish is that it will soon be offered in the trade, in order that I may enrich my little collection, for it is a veritable gem amongst Saxifragas. We are told by the distinguished Editor of the "Botanical Magazine" that this species is nearly allied to *S. ligulata*, and that it is found wild in the Western Himalayas and in Western Tibet, where it is at home at various elevations ranging from 10 to 14,000 feet above the sea level. It is a robust, spreading plant, having a somewhat stout stem which creeps upon the surface of the ground. The leaves are about 6 inches or more long, inversely egg-shaped, bright green in colour, and ornamented round the edges with a fringe of short hairs. The flower-stem is stout, bearing a much-branched many-flowered panicle of large blooms, which are soft rich pink, in pleasing contrast to the bright red of the ovary. The charming colour of these flowers, and the fact that they are produced in the open border or rock-work during March, should be sufficient inducement for all plant-lovers to find a place for it in their gardens.

SILENE ELIZABETHÆ.—This is not a newly-introduced plant; indeed it will be scarcely necessary to remind my readers that many plants formerly cultivated in our gardens may, even in these days of vast introductions and foreign travel, be counted amongst their brightest ornaments. This *Silene*, if my memory serves me right, was figured in the pages of the "Botanical Magazine" nine or ten years since; it is of caespitose habit, and the stems usually grow 6 or 8 inches high, seldom exceeding the latter height as far as my experience goes; they are furnished with lanceolate dark green leaves, and bear upon their branched summits five or six large bright rose-coloured flowers, each measuring 1½ inch in diameter. This plant cannot fail to please even the most fastidious, and it certainly deserves general cultivation. The flowers are produced from the end of June to the end of July. It is a native of the Italian Alps. To my sorrow the only specimen in my garden has this season been de-

voured by slugs during my absence from home. Can any of my readers explain how it is slugs have such exquisite taste? It certainly is a fact that if these pests devour anything it is sure to be some valued plant.

DIANTHUS ALPINUS.—This lovely alpine plant was figured in Curtis's "Botanical Magazine" so long ago as the summer of 1809. It was a rare plant in those days, and was considered then a gem of the first water; after a lapse of upwards of sixty years it is still a rare plant, and is held in high estimation by those who are old-fashioned enough to know and to grow Alpines and herbaceous plants. In a wild state the stem bears only one flower, but under cultivation it frequently bears two or more. It is of a remarkably dwarf compact habit, forming dense tufts on a properly-constructed rockery. The leaves are oblong-linear, obtuse, short, and deep green. The flowers are large, with crenate edges to the petals, bright red shading to rose on the upper side, but paler below. I have not hitherto been very successful with this plant, but it may be that, as it is a native of the high mountains of Austria and Styria, it cannot breathe in the atmosphere of my London garden. June is the time for it to display its beauty, but this season I have not been treated to a sight of its bright blossoms.

DIANTHUS NEGLECTUS.—In general appearance this species resembles the preceding, but, if possible, is even more handsome. On my little rockery four miles from London it grows and blooms. The flowers are larger than those of *D. alpinus*, and of a beautiful soft rosy-pink—a description, by the way, which entirely fails to give an idea of its beauty. It thrives beautifully in that grand rock garden of Mr. Backhouse, of York, which is a sight worth travelling from the Land's End to John o' Groat's house to see; for there is certainly no finer rockery that I know in the three kingdoms.—**EXPERTO CREDE.**

FIG CULTURE.

IN reply to a question from "E. E." on this subject, Mr. Pearson says, "I hardly see how I can make it plainer. My Figs are in pots holding about two pecks of soil. The pots are plunged over the rims in a border of one of my houses, where they have plenty of light and heat, and where they receive plenty of water and an occasional syringe overhead. They are pinched when they have made four or five leaves. To pinch every third leaf is too close for strong-growing plants like mine. Good bearers will under this treatment carry about as many fruit as leaves. When the fruit is ripening we give less water and do not syringe, or the fruit would crack and be bad-flavoured."

"I am reducing the kinds of Figs rapidly, as I find many of the newer ones very inferior to well-known sorts; some are very bad bearers, some drop their fruit badly, and others are inferior in flavour. Of all the newer ones I prefer *La Madeleine*. It is the earliest and also the best-flavoured Fig, to my taste, of the whole collection. Another really good Fig is *Bourjassotte Grise*; this is a new name for an old variety. It has been grown for

many years at Clumber under the name of Blanche. I should think the trees there are twenty to thirty years old, perhaps more, and were considered the best sort they grew in Mr. Moffat's time. Many kinds are hardly sufficiently proved yet, but if your correspondent obtain these two varieties, with Brown Turkey, Brunswick, White Marseilles, and White Ischia, he will have sorts that are sure to succeed. Let him try these first.—J. R. PEARSON, *Chilwell*."

WINTER-FLOWERING PLANTS.—No. 1.

APHELANDRA AURANTIACA ROEZLII.

WHERE dwarf growth, ample foliage, and fine heads of bloom are in request, this plant needs only to be seen to be appreciated. It has fine large leaves 9 inches or more long, by from 4 to 6 inches wide; they are bright deep green, with a silvery metallic hue, especially the midribs and veins. It is ornamental even when without flowers, the leaves hanging down so as to cover the stem and pot. The flowers are of a bright orange scarlet, and produced in fine terminal heads at the dullest period of the year—namely, from December to February. When we take into consideration that a 4-inch pot will grow it well, the plant and flower-spike not exceeding a foot in height, I think it will be at once apparent that it is one of a class of plants that ought to be grown in quantity for decorative purposes.

It is a stove plant, and of easy culture, its treatment not being different from that of other subjects, only the plants must have a position near the glass if they are expected to be dwarf—a shelf 15 to 18 inches from the glass answers well—and to secure good foliage the atmosphere must be moist. A good brisk heat should be maintained in order to insure free growth, but slight shade ought to be afforded in very bright weather, yet this must not be continued after, say, two or three pairs of leaves are well developed. Afterwards, the plants cannot have too much light so as to thoroughly ripen the shoots, from the apex of which the spike of flowers is produced; therefore the points of the shoots must be carefully preserved, and no stopping ought to take place after mid-summer.

The plants, which flower in winter, should for some time afterwards be kept rather dry, breaking off the old spikes of bloom just below its setting-on with the shoot. In March the plants may be repotted in the same size of pot, and placed in a brisk heat and moist atmosphere, but not watered much until the roots are working freely in the fresh soil. The plants will break all the more freely if the pots are plunged in a bottom heat of, say, 80° to 85°. This, however, is not imperative, unless stock is wanted, and then the bottom heat will cause freer rooting, and shoots for cuttings will be formed sooner than would otherwise be the case. When the shoots are 3 or 4 inches long, if a stock is wanted take them off close to the stem, or below the first leaves, pare the base smooth, remove the lowest pair of leaves, and insert the cuttings singly in small pots filled with a compost of turfy loam, sandy peat, leaf soil, and one part of silver sand. Place them in a bottom heat of 80° to 85°, cover them with a hand or bell-glass, and keep them close and shaded. When the cuttings are rooted, which will be known by their growing, tilt the glass, and by degrees remove it, hardening off the plants so as to endure the air of the stove. Pot them in 4-inch pots, and place them on shelves near the glass. These plants will each produce from one to three spikes of bloom, and the leaves will clothe the stem, and partly, if not completely, cover the pot.

The old plants, if not wanted for stock, should, before potting, be cut down to three joints of last year's wood, and when they have made fresh shoots an inch or two long, should be shifted into smaller pots, giving them their final shift in July. These will be the first to flower, followed by the cuttings.

The old plants treated for stock should be continued in the bottom heat, cutting them down as low as desired, only it is well to leave one or two joints of last year's wood, and when they have made fresh shoots an inch long they should be gradually withdrawn from the hotbed, and be potted in August. These will succeed the cuttings in flowering.

There is yet one other sort of plants to which I must refer—namely, seedlings. These have the finest leaves, are the stoutest, and give the largest spikes of bloom. To produce seed the plants should be kept dry overhead, and when the seed is ripe, as will be known by the head opening, sow at once in pans well drained and filled to the rim with the compost named for the cuttings, making the surface very fine.

Just cover the seeds with fine soil, water gently, and put under a hand-glass in the stove. When the seedlings appear admit air freely, and when they have a pair of leaves besides the seed leaves, pot off singly in 3-inch pots. In potting it is well not to pot deeper than with the seed leaves half an inch out of the soil. The plants may now be encouraged with plenty of heat and moisture, and they will soon make some fine leaves; they should be shifted into 4 or 5-inch pots, when they have filled the 3-inch pots with roots. In this size of pot they may be allowed to bloom. I do not take the trouble to sow the seed, but allow it to drop, and as a consequence the plants come up in the tan, amongst sea gravel—in fact wherever the seeds fall and find sufficient moisture for germination. All that is required is to take them up and pot them when they show the first pair of rough leaves, which in a young state have a silvery metallic hue.

The young plants, as well as the old, require to be encouraged with an abundant supply of water, and a thoroughly moist atmosphere until the buds are formed, and then a drier atmosphere is preferable.

The seedling plants will flower when from 5 to 8 inches high, and generally in the winter of the second year.

A compost of equal parts of sandy peat, fibrous light loam torn or chopped up roughly, and leaf soil, and half a part each of charcoal in pieces between the size of peas and hazel nuts, and silver sand, will grow these plants well. Good drainage, it is hardly necessary to say, is essential.

The plants will flower in a winter temperature of 55° at night, and may be placed when in flower in a conservatory at 45° to 50°. They will withstand the atmosphere of rooms well, in fact I consider this *Aphelandra* one of the most useful plants we have.—G. ABBEX.

VENTILATION IN HOT WEATHER.

I HEAR some horrid accounts of scorching. A little air given early at the highest point of the roof would have prevented it all. In such hot weather as we now have early air-giving is the chief point to be attended to. The quantity is not the question. Air-giving early and slightly damping the floors are of more importance and utility than admitting in great quantities whole blasts of heated tropical air. Provide for safety by early air-giving, for a comparatively moist atmosphere by sprinkling beds and floors, and the gradual rising of the temperature even to a considerable height will do less harm than a free current of air heated as it has been of late. For instance, having plants in vineries, I have rarely in these hot days given front air. For instance, also, in our Cucurber pit, which has been only worked too hard, in these warmest days it never had more than from 1 to 1½ inch of air at the apex. That, and damping the floor and wall, were of more benefit, with a little whitening shading, than drawing down the sashes partly in such weather. It was better that there should be a moist heat, with air at 90°, than a greater amount of air.

The scorchings I hear of are chiefly attributable to the want of giving air early, and then giving too much of it for tenderly-reared plants to bear. I believe that, if for nothing else, I may take the credit of first advocating early air-giving, and then to be the less concerned about the quantity, so long as sun heat alone raised the thermometer. It is a different affair when sun heat and fire heat meet, which they ought never to do in such weather as we have had lately. An old worthy writes, "My man, thinking the day was to be dull, put on a brisk fire in my Cucumber house, and the sun coming out bright by 9 A.M., he was forced to give an abundance of air on the 5th, and the leaves have all been scorched on their edges, and look as if they would die." What should have been done, what can he do, to remedy the disaster? First, when he saw the sun coming out, he ought to have pulled his fire out, then slightly shaded the house, been satisfied with 2 or 3 inches of air, but sprinkled the beds and watered the paths all the way along. If the Cucumbers are strong the same treatment will restore them, but if too far injured it is better to plant afresh. It is difficult to instil the simple principle, that strong fire heat and fierce sun heat ought never to occur together under a glass roof.

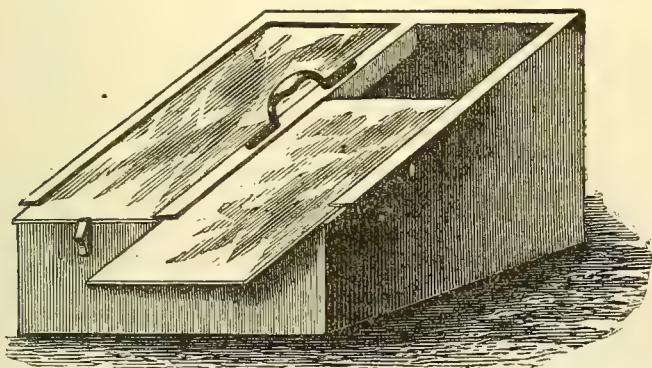
Though it may make me appear almost patriarchal to state that about the time Donald Beaton was in his glory I gave utterance to similar ideas in London's "Gardener's Magazine," yet I have felt confirmed in them ever since. That might be partly owing to having lived so long with a worthy veteran who had passed through the Peninsular war, and was also at

Hougmont (Waterloo), under Wellington. After a hard day's march in sunny Spain no one knew better how to cool a bottle of wine by putting it into a woollen stocking, and keeping it wet in the sun. No one knew better the properties of confined air for keeping out cold and heat: hence he had double windows for his favourite rooms, and he made me dispense with plants in a corridor because I could not keep them there without air-giving. "Why, the heated air lets in the heat to me. Keep all shut-up, and in the room beyond I shall enjoy a delicious coolness." And it was so.

This matter of air-giving is not understood, even as respects our sitting-rooms and bedrooms. Under all aspects you will see windows stand open to get fresh air: all right enough, but what about the delicious coolness in such weather as we have lately had? I say advisedly, the closer every window is kept whilst the sun shines upon it, and if blinds are used too, the cooler and the more pleasant it will be. If the windows face the east, open them in the afternoon; if the west, open in the morning, shut by midday, and open after sunset, and so on in proportion. In such weather it is a comfort to keep heated air out. It adds to the discomfort to let it in freely. This advice acted on, many a bedroom, even in summer, might be a cool retreat, that is now little better than an oven, because everything in it and about it has been heated by the sun's rays, and the heat will be radiated and reflected during the night, so as to prevent refreshing sleep. A great point would be gained if it were clearly understood—that, however desirable in winter, it is not equally desirable in summer that sun heat and sun light should have free access to our living or sleeping rooms. A great point in comfort would be gained if the simple fact were clearly understood, that a cool retreat depends greatly on keeping the hot air out.—R. FISH.

GILBERT'S HAND-LIGHTS.

AMATEUR gardeners with large ideas and small means have long been in want of something, not so large and expensive as a frame, in which they could raise a few seeds of the less hardy kinds of plants not requiring a stove heat. For such nothing, perhaps, is cheaper than a common flower-pot covered with a piece of glass; and generally speaking if the season becomes progressively warmer, and the plants do not grow too large, and if the attention bestowed is very careful, satisfactory results are secured. But then, there is a great deal of trouble attached to attending to a number of glass-covered pots, and the smaller



they are the greater is the danger of injury to the plants which they contain; once these reach the glass a change of quarters is inevitable, and if, as in the past spring, cold weather succeeded an unusually warm period, they must either spoil or perish. We have tried a number of contrivances, but none have pleased us better than those formed of wood, which, thickness for thickness, is at least four times more effective than bricks in keeping out cold. The old hand-glasses were very useful for the purpose we have named, and very useful, too, for protecting Cauliflowers, Lettuce, and out-door Cucumbers, but they are expensive and very liable to breakage. Mr. Gilbert, gardener to the Marquis of Exeter at Burghley Park, has devised a hand-light quite as cheap as, and from the sides being formed of wood more effective as a protector than the wood or iron and glass hand-light, while it is equally portable and less liable to breakage. As will be seen by the accompanying figure, the glass slides in grooves for the pur-

pose of giving ventilation and attention to the plants, and it can be lifted or elevated as readily as any ordinary hand-light. It is, in fact, a miniature two-light frame, with two pieces of glass sliding in grooves, instead of the ordinary glazed sashes. For protecting purposes we have a decided preference in favour of wood and glass as compared to pottery and glass, and, we know not why, but plants seem to thrive better under the one than the other. We can recommend Mr. Gilbert's as a good and very neat protector, likely also to be useful in many other ways.

HAND BOUQUETS.

THE letter of "INQUIRER" opens out a field of great interest and a subject on which much might be said. He has fallen into disfavour, it appears, because on a recent occasion when he was acting as judge he preferred a small but delicately arranged bouquet to one of larger dimensions formally arranged, and, while striking at first sight, deficient in taste of arrangement. Now, presuming that his description is correct, and without prejudice, as the lawyers say, he was unquestionably right, for the great fault of bouquets as generally made up is lumpiness. "You have," said an eminent Parisian *bouquetiste* to me once, "the very best and choicest flowers in England; but oh! how you arrange them—crowd them together, and make horrid mops of them!" and it is generally true. Yet all this is a matter of taste; as people do not often agree on what constitutes beauty in the human face divine, so in all ornamentation we may almost say, "*Tot homines totidem sententia.*"

What the standard of good taste in a bouquet is it would not, perhaps, be difficult to decide. Lightness of form, brilliancy in colour, yet with a due consideration to tone, so that nothing glaring may offend the eye, and portability, are some of the points I should insist upon. As to those bedding-out bouquets (I can think of no better name), in which the flowers are arranged in circles of colour, or the bouquets quartered off in whites, and blues, and reds, they are very abominations, although, I believe, the fashion was set by some deluded French *bouquetiste*; and then, if a thing becomes fashionable, away goes taste. Is there any human being who considers that the present fashion of wearing a tower of false hair and a bit of a thing called a bonnet on the top thereof can be considered as good taste? and yet how utterly useless to prove that it violated every canon of beauty! All honour to whoever, then, stands up for simplicity and elegance as opposed to lumpiness and fulness. That these mistakes are made by French artists as well as our own I can testify. When, before the war, I was deputed by the Crystal Palace Company to obtain and bring over for one of their shows the best productions of the best *bouquetistes* in Paris, I went to one well-known name, told him my wants. "Ah! you shall have such a one as will astonish you." Well, I left it to him. In due time a huge box arrived at my hotel. I could not open it, but when I did so at the Palace it was nothing but a huge mass of Rose buds without either elegance or beauty. There is no plant of greater use to the bouquet-maker than *Adiantum cuneatum*, yet it must be remembered that it is not to be used, as charity, to cover a multitude of sins, as I have seen it used. A badly, lumpily arranged bouquet has been covered over with a few fronds, which have hid its defects. I conclude, therefore, that "INQUIRER" was right, and hope all who have to judge bouquets will come to a like decision when called upon to do so.—D., Deal.

ADVICE FROM BEULAH—SILVER-VARIEGATED GERANIUMS.

WE are anxious to correct an error into which we have several times fallen when describing the merits of the various Geraniums that we employ for the embellishment of our flower garden. Of the Silver-edged varieties we have for several years been very much in favour of Miss Kingsbury, and we have discarded nearly all others of the Silver-edged section except Pearl, to make way for that, our favourite. Although we have grown Pearl in small quantities ever since it was sent out by Mr. Pearson, its fortunate raiser, yet we have never till this year grown it in sufficient quantities to test its real qualities as a bedder when grown *en masse*. At

bedding-out time, as we intended to plant two circular beds in one of our flower gardens with Silver-edged Geraniums, we, like sensible sisters, agreed to have one bed of Miss Kingsbury and the other of Pearl. They were therefore planted according to agreement with fine, strong, healthy, robust plants, that have never "looked back" for a moment since they were planted, nor even lost a leaf—such plants as the Rev. C. P. Peach judiciously recommended at the Birmingham Horticultural Congress, and not half-starved plants as we too frequently see even in many noblemen's gardens. Since the time of planting, Pearl has been by far the handsomer bed; and though we have not a single bloom on any other plant of Miss Kingsbury in any part of our gardens, our bed of Pearl is smothered with a profusion of rich blooms that we can scarcely describe—something between pink and magenta. We therefore yield the palm to Pearl, and pronounce it the best of all the Silver-edged Geraniums yet in commerce. In habit it is dwarf and spreading, with a broad leaf margin of pure white, and looking at it in the distance it is like a sheet of burnished silver.—SARAH ANN, CLARA, AND AMY ALICE, *Geranium Cottage, Beulah.*

RATS IN VINE BORDERS.

My viney has suffered from rats; they have made their way into the border, and at night they carry off and eat the Grapes; they have also been doing damage to plants. Will you tell me what I should try for them? We have tried iron traps, but to little purpose, as the damage is often done before they are trapped. I hear gas tar is a good thing to put down their holes, but we are afraid to try this for fear of injuring the roots of the Vines. As no doubt others have suffered in the same way from these pests, perhaps you, or some of your correspondents, can help me out of my difficulty.—J. C. J. B.

SOME PREDATORY INSECTS OF OUR GARDENS.—No. 33.

EXAMINING lately the stems and branches of some Currant bushes for the purpose of ascertaining some further particulars about the habits of the Currant Clearwing (*Sesia tipuliformis*), I came across the remains of sundry defunct Coccæ, which, from their dusty and dingy appearance, must have been long lifeless. Their larvæ had departed, for no trace of eggs or larvæ were visible, yet the withered parents still remained attached to the plant which had yielded them nutriment. I failed to find any living specimens; but from my recollections of former cursory observations, at a time when I had no particular interest in the enemies of the Currant, I incline to the supposition that the Coccus described by Kirby as yielding pink eggs entangled in a considerable mass of web is not the species most frequent on our bushes near London. This comes nearer to what he denominates *Coccus Persicæ*, if it is not identical with it.

Surely the benefits we derive from certain species of Coccus, as yielding to us such valuable products as cochineal and lac, ought to be duly estimated as a set-off against the injuries we receive from various other species both in the hothouse and in the open ground; and it is at least possible that we may hereafter be able to turn to good account the "shields" of some of our indigenous species, which evidently contain a proportion of colouring matter of several shades of brown and red. Also, to allay our indignation against these and other species of insects, which, by rather insidious yet persevering attacks, drain shrubs and trees of their sap, we may consider that within certain limits the process is not very harmful—perhaps even slightly beneficial. Some insects parasitic upon the human subject, the flea for instance, have been deemed by physiologists as healthful in their operations, communicating a needful stimulus to the circulation. May not this be true with regard to some of the pests which draw the sap from plants or devour their buds? It is unquestionably true with regard to many trees, that their blossoms are far in excess of the number which could possibly be matured; and if it be well that these should be thinned out for the advantage of the survivors, why need we quarrel with the means employed? Even the poet has been impressed with the truth as he pondered over Nature's "secret meaning in her deeds," that it frequently occurred that from "fifty seeds she often brings but one to bear."

Sometimes, it is true, insects carry the process of reduction rather too far, and not only diminish flowers, fruit, and seeds,

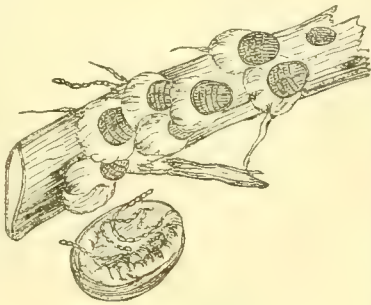
but also impair greatly the strength of the object of their attack. This frequently occurs with the Coccæ, commonly called Scale, with some descriptive adjective added. It is asserted, however, by some that the term Scale should be restricted to the genus *Aspidiotæ*, and not applied to the *Coccus* proper. It is quite obvious that the habits of different species vary much; for if we accept Mr. Newman's statement that the hosts of scale insects which appeared in the summer of 1871, not only in gardens, but in the open country on such shrubs as the Whitethorn, owed their existence to the dry and cold weather, their constitutions must be unlike those of the species which are frequent in conservatories and forcing houses, for these delight in warmth. Probably, however, this has to do with the fact that most of the latter Coccæ were originally foreigners, imported with exotic plants, and so retain much of their native peculiarities. One point at least all seem to have in common—namely, an abhorrence of much moisture. Taking advantage of this, when Pines have been attacked by the brown Coccus (*C. hesperidum*), it has been extirpated by keeping the house at a temperature of 100° or 110° and filled with steam. This process, though kept up for many hours successively, is stated on reliable authority to be quite innocuous to the Pine Apple, while it is destructive to the Coccus, and, indeed, to most other insect annoyers. With other plants or shrubs infested by Coccæ, the copious application of water has been found an effectual cure, especially if thrown with some force, as by a syringe or engine.

Though some species of this troublesome tribe have already been described, the larger species which feeds upon the Vine has not been noticed in this series of papers. *Coccus Vitis* appears with some degree of uniformity in our vineries, and very possibly a few years of neglect would lead to its being very troublesome; but it is one of those insects which, being tolerably conspicuous, is kept well under by gardeners. It is decidedly less frequent upon Vines growing in the open air. An instance in proof of this occurred in Chelsea, where an old Vine, which had several visitations of the scale while it was enclosed in a greenhouse, was finally freed from it when the house was pulled down. "That Vine's infested with the Coccus," remarked one entomologist to another, looking critically upon the branches. The words were overheard by an old gardener standing by. "Beg pardon, sir, I thought 't was the bug it had got upon it. Howsomever, if it's a coccus it's cooked the Vine, I'm afraid." But his prognostic was not fulfilled. A good washing with a solution of soft soap impregnated with tobacco cleared off the enemies in quick time, and no better method can be devised of dealing with it at those times of the year when the stem and branches may be washed with impunity. When Coccæ cluster upon the leaves of any plant they may be brushed off without much difficulty, while the eggs are covered by the female insects; but very often the young adhere so closely when sucking, that the only thing to be done is the removal of all the twigs or leaves which can be spared.

The letters of "RUSTICS," edited by Mr. Newman, gave us the earliest information about the Vine scale or mealy bug. Farther details have been added to complete its history by other naturalists, especially by the above-named editor. The observer usually makes his acquaintance with the gravid female of *Coccus Vitis* in the first instance. This is decidedly "bug-like" in form, yet exceedingly sluggish in its movements. It is, indeed, destitute of wings, but, with that exception, endowed with all the organs usual in Hemiptera. As seen upon a branch, little is noticeable except the shield-like thorax and abdomen, which, at first brown, gradually become darker—indeed nearly black, and wrinkled. Being matured, she scarcely moves, and seems inanimate, though sufficient life remains, even after she has ceased to feed, to enable her to complete the process of egg-laying. "The female," says Mr. Newman, "is so closely attached to the shoot, that it is impossible to remove without killing her; she gradually swells until she attains an immense size, when her whole body becomes a bag of eggs; she begins laying with her body glued down all round, but between her body and the rind, except just at the edges, is a quantity of gummy cotton spread over the whole space which she covers. The first egg is laid in this cottony substance without any disturbance to the margin of the body glued to the rind. It does not adhere like the eggs of other insects, but lies loose; then another egg is laid, which pushes the first a little forwards, and then another and another, none of them being visible from without, so that all the eggs which a female Coccus lays she incubates like a

brooding hen." It is not certain whether the covering really accelerates the hatching of the eggs; at least, it serves as a shield to protect them from divers dangers. But the oddest circumstance in the history of the female Cocco is that what was a body becomes a mere film. There is a traditional story afloat about some monkeys, which, having resolved to eat themselves up, commenced at their tails, and after a certain number of vertebrae had been consumed, gave in; but though a Coccus does not devour itself, the body disappears, or wastes, head and legs vanish, and the upper and lower surfaces form a shield. It is not long after the parent has actually died that the young brood bursts the egg-shell, making its first meal off the cottony secretion which enveloped the eggs. The little creatures are exceedingly active, and Mr. Newman compares them in this stage to spiders, only they possess but six legs, while juvenile spiders own to eight. They are also somewhat of the tint of the notorious "red spider," which is really a mite or *Acarus*. To limit their range at this period, and cut off such of the wanderers as are within reach, it has been recommended to brush the old wood with spirit of tar, and touch the branches with oil (or spirit) of turpentine. Ere long, having increased slightly in size, the immature Cocco settle down, and assume the appearance of minute scales or shells. Though not immovable, they are seldom to be discerned in the act of locomotion, being generally steadily engaged in sucking the sap by means of a rostrum or beak, which is quite hidden from view, owing to the head of the creature being bent under. A party of these look all alike; they are so at present, yet how different is to be the destiny of the two sexes. The males, becoming adult as larvæ, pass into the chrysalis stage, and after a brief interval come forth in winged form, with heads of a comical aspect, two large wings, and tails furnished with two thread-like appendages, which can hardly be weapons. The females seem to proceed from the larval condition to the imago state without change of outer form, and as it is not in their power to indulge in aerial excursions, they still continue to feed and grow, and each, being impregnated, introduces more Cocco into the world.

About nine years ago a new species of Coccus (or rather a species of insect to be placed between the Aphis and the Coccus) was discovered upon a Vine at Hammersmith, and subsequently that eminent entomologist, Professor Westwood, received specimens of it from various parts of England and Ireland. In 1869 a full account of the species was given by the same gentleman, who has shown that this insect is much more troublesome in France than with us. Not only does it prey upon the leaves, but also attaches itself to the rootlets, and the secondary result of this is a fungoid growth or a form of canker, by which material injury is done to the wood. Professor Westwood has denominated the species *Peritymbia*



Coccus Vitis.

one-thirtieth of an inch in length, wingless, armed with a powerful rostrum, considering their size. The males are winged, but little is known about them. From the females being thus sheltered in maturity, it is more difficult to check the ravages of the insect, and especially so when it is at work upon the roots of the Vine. The young larvæ resemble mites, as in the better-known *Coccus Vitis*. On the Continent an opinion prevails amongst some naturalists that the insect attacking the roots is distinct from that found in the leaf-galls; and it is quite probable that more than one species of these singular Hemiptera resorts to the Vine.—J. R. S. C.

MARQUIS OF LORNE CUCUMBER.

I CAN endorse all that "NORTH WILTS" has said of this excellent Cucumber (see page 39), except that it is longer in coming into bearing than any other variety. With me it set its fruit, grew freely, and came into bearing as soon as any other sort I have. Mr. Jenner, fruiterer, of Tonbridge Wells, told me it gave general satisfaction to his customers, and he is no mean authority.

Another Cucumber (not yet in the trade, I believe), I must not omit to mention; it is Mr. Douglas's Tender and True, which is the finest variety for exhibition purposes that I have ever seen. It easily took the first prize at the Tonbridge Wells Show on the 5th inst., and if the plant is as prolific as the Marquis of Lorne, it must become a general favourite.—W. GRAVES, *Market Gardener, Colebrook Park, Tonbridge.*

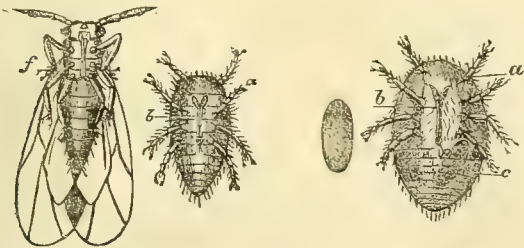
I HAVE found it a very plentiful cropper in the frame, but not quite so good in the Cucumber house. I grew one in the frame to the length of about 27 inches, and nearly 4 lbs. in weight, another about 28 inches, and one about 30 inches. I have been cutting since the middle of April.—BURTON JOYCE.

Would that its only fault were lateness, and that I could join in its praises with "NORTH WILTS." It is of no use in an ordinary frame unless favoured with extraordinary sunshine. With plenty of heat at command it grows like a Willow, but when grown (and I have tasted several fruit from different places) it is not, in my opinion, fit to eat, being so sweet, tough, and devoid of flavour, that I hope never to taste it again. It will do well, with the requisite amount of heat, for market and shows, until consumers and judges recognise its qualities.—C. C. E.

HEATING BY HOT AIR.

BELIEVING that the time has now arrived for a reconsideration of the question whether hot-air heating may not, in many instances, successfully compete with hot-water heating; and having during some years past practically succeeded with a method of air-heating, I was induced to exhibit a model of my system at the late Royal Horticultural Show at Birmingham. I have reason to think that it received some notice from persons well qualified to give an opinion on its merits, and I write this with a desire that the expression of such opinion should be elicited. I am far from claiming superiority in every case; in fact, where a town of glass has to be warmed from one source of heat, I see no likelihood of the agency of water being superseded. But for buildings placed in a range, or heated separately, I think from the hot-air system many advantages may be secured which are not obtainable, at least not readily obtainable, from the hot water.

Conceding that some equivalent must be found for the large heated surface of moderate temperature, which is an admitted necessity for successful culture, I submit that such an equivalent may be found in the cooling effects of rapid currents of moist air passing over a gill stove highly heated. It is when circumstances are favourable to the inducing of such rapid currents that I claim the balance of advantage for the hot-air system. If after constructing a firebox in such a manner that the fire shall not impinge upon metal, we dome it over with a box of wrought iron 3 feet square, we shall have, in addition to the brickwork, a heating surface of 45 square feet. By adding gills, twelve on each side and 3 inches deep, we increase the surface to 135 square feet; and if we can subject this extended surface to the refrigerating effects of a moist current of air rushing over it with many times the velocity of the currents from the ordinary hot-water pipes, we have the means of effecting our object—viz., the delivery of large quantities of not too



Peritymbia Vitisana.—*Phylloxera vastatrix* (J. E. Planchon).—Female specimens and their eggs. *a*, antennæ; *b*, horns or suckers; *c*, egg plainly visible in the body of the insect; *f*, winged form of the insect. All magnified.

Vitisana, the name being suggested by the habits of the females; for they produce upon the leaves gall-like excrescences, within which they are to be found enclosed when full grown, and in this also the eggs are deposited. They are small, being scarcely

fervid air. This object once attained, advantages belonging to the system become apparent. The air flue, which, unlike the old smoke flue, requires no special care in its construction, delivers its heat through slides, which by a simple adjustment apportion the supply at will, or they can be made to shut it off altogether—no mean advantage when sun heat meets fire heat on a fickle day. The air so admitted is fresh air, bearing with it the healthful influences of the outer atmosphere, and causing, by the velocity of its incoming, the aerial perturbation so grateful to plant life, and for every gallon of fresh air admitted a like quantity is expelled; so assuming the area of inlet to be 4 square feet, a like area of outlet will be required, and this is necessarily equivalent in a house 60 feet long to half an inch of top air always left on.

I will not go further into detail, unless I find that you think the subject worthy of discussion, and that some of your readers care to discuss it.—E. HOUSMAN.

PLANTS IN FLOWER AT GLASNEVIN BOTANIC GARDEN, DUBLIN.

The following plants were in flower on June 29th:—

Alstroemeria oculata
Achillea tomentosa
ægyptiaca
Alfredia cernua
Armeria ararati
rosea
speciosa
cephalotes
maritima formosa
Abelia triflora
Antirrhinum
Aristolochia Clematitis
Anthyllis Vulneraria
Adonis autumnalis
Asterias lutea
Aconitum Ackermannii
Asphodelus luteus
Anchusa
Astrantia major
maxima
Anbrieta deltoidea
Aira cristata
Asclepias
Aquilegia canadensis
thalictrofolia
aurea
Anemone thalictroides plena
Arabis petraea
Alchemilla argentea
Ajuga genevensis
Amsonia salicifolia
Amayllis longiflora
Astragalus ponticus
hypoglottis
Arenaria setacea
longiflora
cephalotes
laricifolia
Aconitum hispidum
sibiricum
umbrosum
Napellus
Actæa spicata
Bryonia dioica
Borago officinalis
Belladonna baccifera
Baptisia tinctoria
alba
exaltata
mollis
Bunias orientalis
Betonica grandiflora
Cistus undulatus
albicans
creticus
Centaurea macrophylla
Crambe cordifolia
Cerastium tomentosum
grandiflorum
Cynosurus elegans
Cheiranthus multiflorus
Cytisus capitatus
Chrysanthemum leucanthemum
arcticum
Campanula glomerata
medium
grandis
coronata
sibirica
pumila
macrantha
lobata
sarmatica
carpatia
barbata
Carex arenaria
Cotoneaster affinis

Clematis nepalensis
angustifolia
diver- ifolia
lathyroides
Jackmannii
Cape Honeysuckle
Chrysobactron Hookerii
Calandrinia discolor
speciosa
alba
Cimicifuga foetida
Chelone barbata
Crucianella stylosa
Distanthus Fraxinella
Dicentra chrysantha
Dryas octopetala
Dielytra eximia
spectabilis
Delphinium grandiflorum
hybridum
chinense
speciosum
discolor
cheilanthum
alopecuroides
perigrinum
crassicaule
grandiflorum celestis
magnificum
Dianthus cesius
alpinus, and many others
Dipsacus sylvaticus
Digitalis
Deutzia scabra
Draba incana
Dracocephalum Ruyschianum
Euphorbia helioscopia
Epilobium angustifolium
alsinifolium
Eryngium alpinum
Erigeron philadelphicus
speciosus
Erinus alpinus
Eriogonum sericeum
Erodium manescavi
macrodenium
Reichardii
Escallonia
Fumaria officinalis
Feather Grass
Funkia Sieboldii
Ferula tingitana
Geranium lancastricense
longiflorum
pratense
ibericum
sanguineum
platypetalum
Gladolus natalensis
Colvillii
Genista radicans
sagittalis
Atteleana
cineæa
florida
Gypsophila arenaria
repens
glomerata
Hedysarum pallidum
canadense
Hippocrepis comosa
Helianthemum vulgare
tomentosum
hyssopifolium
Milneri
Hieracium, various
Heracleum sibiricum

Hypericum ciliatum
Iris notha
Douglasii
Iberis Tenoreana
Isia scillarisa
Isatis dasycarpa
Lilium croceum umbellatum
pygmaeum
bulbiferum
Linaria dalmatica
repens
Lupinus arboreus
Lathyrus Drummondii
Lychnis Haageana grandiflora
Linum narbonense
Lamium maculatum
rugosum
Lavatera arborea
Lupines
Leucanthemum striatum
astratum
Leontodon dubium
Libanotis mentana
Lysimachia verticillata
Moricandia arvensis
Morina grandiflora
Matthiola sinuata
incana
Mexican Poppy
Marigold
Malva sylvestris
Myosotis
Meum athamanticum
Magnolia Soulangiana
Marrubium supinum
Mule Pink
Melissa pyrenaica
cordifolia
Nemophila
Nymphaea alba
Nuphar lutea
Nasturtium
Nepeta Glechoma
ucrania
macrantha
croatica
Enanthe in variety
Oenothera odorata
Orobis lathyroides
Ornithogalum nutans
Orchis maculata
foliosa
Oxalis lasiandra
floribunda
alba
rosea
Ophrys apifera
Ononis fruticosa
Oxytropis campestris
Ozothamnus thyrsoides
Onobrychis sativa
Pentstemon pubescens
glaucum
fruticosum
grande
gentianoides
Portugal Laurel
Pinks
Platystemon californicum
Phlox intermedium
Phlox samia
Pansies
Pellitory
Phyteuma orbiculare
cordatum
Potentilla opaca
formosa
Pyrola rotundifolia
Pyrethrum Parthenium
Pæonia biflora
Prunella Webbiana
Phlox procumbens
frondosa
Phalaris canariensis
Polemonium boreale
sibiricum
lactum
Polygonum Brownii
erectum
Primula involucreta
cortusoides amena

Primula farinosa
hirsuta
Roses
Rocket
Rhododendron
Reseda luteola
Sambucus lacinia
Saxifraga aizoides
pedatifida
Cotyledon
Sparaxis grandiflora
Smelowskia alpina
Saponaria calabrica
corymboides
Salvia Forskahlia
raphanifolia
cærulea
sylvestris
Tenorei
lusitanica
scabiosæfolia
orientalis
canadensis
verbenacea
Sisyrinchium magellanicum
Spirea Filipendula
arvensis
Silene maritima
alpestris
saxatile
Saxifraga
alpina
Sweet Alyssum
Scirpus sylvaticus
Scabiosa sylvestris
papposa
Stenactis speciosa
Symphitum, various
Solanum crispum
Symphoricarpos vulgaris
racemosa
Stellaria pungens
cerastoides
Sedum Beyrichianum
angulatum
multiceps
pallens
glaucum
Tropeolum polyphyllum
speciosum
Trifolium olympicum
Thymus Serpyllum
Thalictrum rugosum
Tradescantias
Trapa natans
Veronica decussata
Chamaedrys
elegans
foliosa
candida
macrantha
urticeifolia
crispa
Loudonii
Tenarium
leucantha
austriaca
Jacquini
paniculata
spuria
carnea
taurica
amethystina
glabra
complicata
aphylla
latifolia
rutheica
lacinata
corymbosa
Valeriana officinalis
Viola cornuta
alba
palmensis
Perfection
montana
Vitadenia triloba
Verbascum spectabilis, and many others
Viburnum macrophyllum
Weigela amabilis

—P. N. W.

SALES OF ORCHIDS.—Mr. J. C. Stevens has been busy among the Orchids of late, having sold at his rooms, King Street, Covent Garden, on the 4th inst., a large importation from Bogota, Magdalena, and an unexplored district of South America, chiefly consisting of Masdevallias, Odontoglossums, and Schomburgkias. Then on the 6th he had another important sale of Cattleyas, Burmese and West Indian Orchids; and again on the 13th he brought to the hammer 420 lots, mainly East Indian Orchids, realising about £400. *Phalenopsis amabilis* brought from £3 15s. to £5 5s., *P. Schilleriana* from

three to six guineas; besides which there were about two hundred plants of *Dendrobium taurinum*, and a large number of *Saccolabiums* and *Disas*.

HINTS ON THE FORMATION AND ARRANGEMENT OF SHRUBBERIES, &c.

(Read at the Horticultural Congress at Birmingham.)

It may possibly be admitted that the principal objects in view in forming belts and clumps of evergreen shrubs or dwarf trees in the immediate vicinity of country mansions and villa residences, are those of separating certain portions of the grounds from others, to conceal objectionable objects if any such exist, and to afford shelter and seclusion to walks, drives, lawns, flower gardens, &c.; and by the skilful disposal of such belts and clumps the limited extent of ground can not unfrequently be apparently increased, and a pleasing diversity given to surfaces which would otherwise be flat and uninteresting. This paper, however, will not be so much an attempt to show how this can be done as to offer a few suggestions as to the selection of material required to form such belts, &c., when their outline and extent have been indicated by the designer. It must be apparent to anyone who may have given attention to this subject, that the very important operations of arranging and planting shrubberies are too frequently performed in a somewhat hasty and inconsiderate manner; not only without due regard to the effect likely to be produced, but also as to the dimensions which the varieties of plants employed are likely to attain; and in too many instances examples may be found in plantations of trees and shrubs, where ornamental and valuable specimens are growing in such close proximity to each other, that all are more or less seriously suffering from the contact; and the natural reluctance to remove or to destroy either one or other of the overcrowded specimens, tends to delay, which ultimately proves fatal to the beauty and graceful outline of all.

It is quite true that by the aid of some of the many excellent transplanting machines which have of late years been introduced, the re-arrangement of trees and shrubs of even large dimensions can, without great difficulty or risk, be effected. But this re-arrangement, it must be observed, can only be accomplished by a considerable amount of labour and expense, the necessity for which might in many instances be obviated by the exercise of a reasonable amount of forethought in the first instance. The portion of ground intended for shrubberies ought always in the first place to be efficiently drained, if this be found necessary, and should likewise be trenched or deeply dug; and should the soil be of inferior quality, it ought to be enriched by the addition of suitable soils or manure. Very light or sandy soils might be benefited by a liberal application of well-pulverised clay, while heavy soils would be equally improved by the addition of lime, sand, or ashes; and the planting of the shrubs and trees ought to be performed as early as possible during the autumn.

The plants intended to ultimately form the plantation ought to be selected and arranged with the greatest possible care, taking into consideration the size, habit, and general appearance which each individual plant will present when approaching or when arrived at a fully developed condition; and these ought to be carefully planted at distances seldom less than 15 or 18 feet from each other, and even these distances ought to be considerably increased when Conifers or other trees of large growth are introduced.

The spaces between those plants which, it may be said, are intended to be grown into specimens of their respective varieties, and to ultimately form the clump or belt, as the case may be, can now be filled up as closely as may be desired, by the more common varieties of shrubs, with a view to produce an immediate effect, using such sorts as the common Laurel, common Holly, Evergreen Privet, &c. These can be gradually removed without remorse as the more valuable kinds are found to require the additional space.

It sometimes happens that aged forest or park trees, which it may be desirable to retain, come within the space to be enclosed as shrubbery, and when this is the case it is unadvisable to plant valuable specimens of shrubs or trees very near to them, as, if this be done, there is little probability of their succeeding well. But the ground in the vicinity of such trees is better planted thickly with such shrubs as the common Laurel, Holly, Box, or any other shrubs known to succeed under the drip and shade of large trees.

Coniferous trees attaining large dimensions and of an ornamental character, are perhaps better adapted to the purpose of forming single specimens upon the lawn; but when shrubberies of considerable depth and extent are being formed, they can be used with great advantage in the more central parts, or at considerable distances from the walks or drives, while the various ornamental shrubs of dwarf and compact habit can be selected for the more marginal positions.

Many of the numerous varieties of deciduous flowering shrubs

are exceedingly beautiful, and are well worthy of extensive cultivation, but they ought to be used but sparingly (if at all) in plantations intended to act as screens or blinds. I should even be inclined to go so far as to recommend their total exclusion from such plantations, which ought to be composed entirely of evergreens, of which there exists an infinite variety to select from.

Evergreen and deciduous trees and shrubs harmonise sufficiently well with each other during the summer months, but such is not the case in winter, and it is during the winter months that the warmth and shelter of belts and clumps of evergreens are most required and appreciated, and on that account I would strongly recommend the grouping of deciduous flowering shrubs by themselves.

I should likewise be inclined to recommend the exclusion of the *Rhododendron*, the *Kalmia*, and other American plants, from the shrubbery borders, as they very rarely succeed well when mixed with other shrubs, unless in localities where the natural soil happens to be suitable to this class of plants; and even when this is the case, such plants succeed better and are vastly more effective when grouped by themselves.

As has already been said, in forming belts of considerable depth, or large clumps, of evergreen trees and shrubs, many of the large-growing varieties of the family of *Conifera* may be used with great advantage, more particularly in the central parts; and for this purpose mention may be made of such plants as the *Wellingtonia gigantea*, the *Deodar Cedar*, and the *Cedar of Lebanon*; the *Libocedrus sinensis*; *Abies Douglasii*, *Morinda*, *orientalis*, and many others, including the *Piceas*, or *Silver Fir* tribe, all of which are exceedingly ornamental, and most of them of rapid growth. The same may be said of the genus *Pinus*, many of which, such as the *Pinus austriaca*, on account of its rapid development and density of habit, are exceedingly valuable wherever shelter and seclusion are desirable.

Altogether, the family of *Conifera* furnishes of itself an infinite variety of dwarf-growing trees and shrubs of suitable character, and to which can be added the various kinds of common evergreens, such as *Laurels*, *Hollies* of various sorts, *Phillyreas*, *Alaternus*, *Arbutus*, *Laurustinus*, *Aucubas*, *Buxus*, *Mahonias* or *Berberries*, *Cotoneasters*, and many others; while, as regards the numerous deciduous flowering shrubs, many of them are so exceedingly beautiful that I would in their case strongly recommend a system of grouping in suitable situations.

The advantages of this method may, I think, be readily conceived, if we contrast the pleasure and satisfaction likely to be experienced from looking upon a flowering group of *Spiræas*, *Weigelas*, or *Deutzias*, with that of beholding single or individual plants here and there in the mixed shrubbery, possibly suffering from the pressure of other species, or at best taking part in a struggle for existence, affording little real pleasure to the beholder. The genus *Cratægus* may be mentioned as capable of forming a noble, varied, and interesting group of plants in any suitable situation in the pleasure grounds, as would also the *Syringa* or *Lilacs* of various kinds, the *Viburnum Opulus* or *Guelder Rose*, and many other species of deciduous flowering shrubs; and as a deciduous tree of rare beauty, the *Acer Negundo variegatum* will, doubtless, be found to be of great service in producing striking effects either as single specimens or in suitable groups, with the advantage of a dark or sombre background.

The various species of *Rhododendron* and other American plants have already been recommended as suitable plants for the purpose of forming clumps or groups in the pleasure grounds; indeed, a garden establishment can hardly be considered as complete without a selection of these beautiful plants, although it may be necessary to state, *en passant*, that there are some unfortunate localities on the chalk formation, where it is found to be quite impossible to cultivate them successfully, even in prepared or peat soil. But in all localities where they are found to succeed, scarcely anything can be conceived more beautiful than beds or groups of these lovely plants when in full flower, and even the foliage of the evergreen species renders them ornamental at all seasons of the year.

It may also be said with truth that there are few objects more beautiful and interesting during the spring or early summer months than our common cultivated fruit trees; and there really does not appear to be any good reason why the fruit garden should not constitute a necessary portion of the policy or pleasure grounds of every country mansion. What can be more beautiful than the *Apple*, the *Pear*, the *Plum*, and the *Cherry tree* in full flower? And they are, in fact, exceedingly interesting objects at all seasons. But it rarely happens that they are placed in a position where their beauty can be appreciated and enjoyed. They are too frequently to be found in the vegetable garden, where they are entirely out of place, unless it be in the form of espaliers or cordons, or they may possibly be found in a somewhat neglected and out-of-the-way locality, known as the orchard.

But as an advance or an improvement upon this state of

things, might not these useful and ornamental trees be cultivated with more pleasure, and at least equal profit, in a tastefully designed garden or compartment by themselves, and forming at the same time an essential part of the pleasure grounds? Clumps or groups of varied forms and dimensions could be formed of pyramidal or otherwise trained Apple, Pear, Plum, and Cherry trees, &c., which might be margined by low single cordons of their respective kinds; while single standard trees of various sorts might in suitable situations be allowed to assume their natural habit and dimensions. the whole area to be traversed by winding and comfortable walks, to afford every

facility for the examination and enjoyment of the beauty of the various fruits in all stages of their development.

Altogether I am inclined to think that by adopting some system of grouping such as I have endeavoured to describe, and by adhering to an arrangement which would associate the fruit garden with the pleasure grounds in such a manner as to constitute, as it were, a necessary and important portion of the same, and to some extent effect a combination of the *utile* with the *dulce*, we could hardly fail to give additional interest to the surroundings of a country mansion or residence at all seasons of the year.—PETER GRIEVE.

VIEW ON THE CHARENTON RIVER, BOIS DE VINCENNES.



(From M. Alphand's "Promenades de Paris.")

THE VARIABLE CLIMATE OF ENGLAND.

THE minimum thermometer on the morning of July 3rd on the grass was 39°; the maximum on the 5th, 87° in the shade, 4 feet aboveground: 48° difference between the maximum and minimum in fifty-four hours! The minimum on the morning of the 18th was 44° and 42° respectively on the ground and at 4 feet above it. On the 21st the maximum reached 86°; the maximum on the 19th (two days before), being only 64°. The rainfall from the 7th to the 14th was 3.77 inch; from the 14th to the 21st, 0.03. The maximum temperature of the 14th, 59°, was not so high as the minimum of the 21st. There

were ten variations in the barometer between the 10th and 21st—never higher than 30.12, never lower than 29.84 (corrected for sea level), but never rising or falling consecutively for more than thirty-six hours. This is a sure sign of counter-currents, which will be certain to bring rain if the northerly or arctic current prevails, and it will be fine so long as the south-west or tropical currents predominate. When the maximum is comparatively low and the minimum high, rain is sure to follow; when there is a great disparity between the two, or when the minimum on the grass is much lower than the mini-

mum 4 feet aboveground, it is almost sure to be fine, though if the weather is very hot and the wind breaks to the south-east, electrical storms may come on.

One of the safest signs of fine weather in summer is a steady rise of the glass, with a south-west wind, combined with a steady rise in temperature. My experience teaches me that no dependence can be placed on the barometer without taking the thermometer into consideration as well, and that observations

of the barometer taken only at one hour in the day, say eight or nine o'clock, are not sufficient; the observations ought to be more frequent. I remember one week of violent storms in December, when the range of the barometer taken at 9 A.M. was only 1.21 inch, whereas the real range was over 4 inches, the mercury having fallen or risen during each twenty-four hours, and then returned to nearly the same point; this daily variation being almost an infallible sign of severe winds.—C. P. PEACH.

COLOCASIA ESCULENTA.

This plant is the *Arum esculentum* of Linnæus, and is, perhaps, more popularly known by the name of *Caladium esculentum*; indeed, the genera *Caladium* and *Colocasia* are very closely allied, the points of distinction being chiefly the differences in the shape of the spadix, and the manner in which the stamens are inserted on that organ. It derives its specific name from the fact of its tubers forming a large portion of the diet of the natives in the countries to which it is indigenous. The produce of this and a few similar species is known by the various names of Yams, Eddoes, Cocoa-roots, Tara, and Scratch-Coco. It appears, however, not to find much favour amongst Europeans. The leaves are also frequently boiled as a vegetable, and used after the manner of Spinach with us; but they are said to be very acrid, and are apt to produce very unpleasant sensations after being eaten. It is not, however, as an economic plant that I wish to draw the attention of your readers to it, but to the fine effect which its bold tropical foliage produces out of doors during the summer months if a little care and attention are bestowed upon it. The leaves are peltate, entire, and somewhat ovate or cordate; they frequently measure 3 feet or more in length, and are of a soft glaucous green. As far as my own experience goes, this plant cannot be reckoned amongst the most hardy of the subjects used for subtropical gardening, but with a little care it will display its fine foliage to considerable advantage in gardens in the neighbourhood of London, as well as in the southern and western counties. I have not seen the plant used in the north, but should be happy to hear from anyone who has tried it, with details of the mode of management and success. The beginning of June is quite soon enough to expose it to our variable climate, and it will be well to select somewhat sheltered situations for its reception, as by so doing its large leaves are not so apt to be slit with rough winds, and thus its effectiveness is not destroyed.

The manner of planting will depend much upon the taste of

the operator; the plant is extremely beautiful grouped as a front row to a clump of other large-leaved, strong-growing subjects, and it forms very handsome groups isolated upon

grass, and planted near the walks or borders. When autumn comes lift the plants, dry them thoroughly, and remove all moist, dead, or decaying portions from the tubers; then store away in some cool but dry place, where they may be left until the middle of March. After potting in that month, place them in a slight heat, and prepare them again for their summer quarters.

The foregoing remarks apply chiefly to those not possessing a plant stove; where such exists, lift the plants carefully and remove them to it, first potting them in a mixture of equal parts of loam, peat, leaf mould, and good decomposed (but not spent) manure. Let the pots be well drained, and supply the plants liberally with water, which must also be given freely in their summer quarters, otherwise they will not develop very fine leaves.

I have hitherto spoken of *C. esculenta* as a subtropical plant, but where sufficient space can be afforded it in a stove all the year round, it will make a wonderfully effective specimen. It only requires good rich soil, it will stand any amount of heat, and must have an abundance of water—indeed, it may stand in water if such is at hand; under this treatment it cannot fail to afford the greatest satisfaction to all lovers of ornamental leaves. It seems to be indigenous to the tropics of both hemispheres.

Colocasia nymphaefolia, for the illustration of which we are indebted to Messrs. E. & Henderson & Son, of the Wellington Nurseries, St. John's Wood, resembles very much the species previously named. Some of our eminent botanists consider it a variety only of *C. antiquorum*; but be it species or variety, it is a beautiful object in the flower garden during the summer months, and the treatment recommended for *C. esculenta* will also apply to this plant. The leaves of *C. nymphaefolia* are used as a vegetable in the Sandwich Islands.—EXPERTO CREDE.

HARDINESS OF AQUILEGIA GLANDULOSA.

I BELIEVE I said nothing as to the hardness of *Aquilegia glandulosa*; it is perfectly hardy. I merely intimated the difficulty of keeping it in health in the south, owing, I believe,

to the dry atmosphere. Have your correspondents the true sort—height about 15 inches, flowers 4 inches across? *Aquilegias* from seed are worthless, unless one sort only is grown,



Colocasia nymphaefolia.

or it is saved from the very early and late bloomers. I have heaps of spurious plants of *Aquilegia glandulosa* which grow like weeds.—A. R.

TRIAL OF BOILERS AT BIRMINGHAM.

WE have been requested to publish the following correspondence:—

[FIRST COMMUNICATION.]

"Woolwich, S.E.,

"18th July, 1872.

"DEAR SIR,—I should be extremely obliged if you would kindly say whether any heed or redress would be taken into consideration by the Local Committee of any injustice that any of the boiler competitors have been subjected to. If so, I should like to bring a few facts under their notice, as I feel certain that thorough justice is anxiously desired by all concerned.

"Mr. B. A. Hallam, Sec." "Yours truly, H. CANNELL.

[SECOND COMMUNICATION.]

"Woolwich, S.E.,

"19th July, 1872.

"SIR,—The enclosed is a copy of letter just received from Mr. Mee, which I beg, with this, you will lay before the Local Committee; and although he has a medal awarded him for merits combined in my circulator, yet he is dissatisfied, and I must beg of you as gentlemen to withhold this gold medal until there has been a thorough investigation of the whole matter. I, therefore, protest in the strongest possible terms against this medal being awarded to Messrs. Hartley & Sugden.

"Copies of enclosed and all other communications forwarded to the Council of Royal Horticultural Society, and Editors of the *Gardeners' Chronicle*, *Journal of Horticulture*, *Gardener's Magazine*, and the *Garden*.—I am, sir, your obedient servant,

"Mr. B. A. Hallam." "HENRY CANNELL.

[From F. J. MEE, Horticultural Builder and Hot-water Engineer.]

"Smithdown Road, Liverpool,

"18th July, 1872.

"To Mr. Cannell.

"DEAR SIR,—I daresay you have heard by this who has got the gold medal, and will be able to judge for yourself if it has been fairly awarded. I cannot possibly see what points Hartley and Sugden have gained to entitle them to it, unless it is the friendship of the principal Judge. They started, as you are aware, on the 26th of June against Dennis for 500 feet, and it was, as you remember, a dead failure. That ought to have settled them; but, no, they are allowed to bring forward their brickwork 15 inches, to get new doors, new dead plates and flue frames from Mr. Hassall, the Judge, and allowed to go on again on the 3rd of July for 500 feet, until Mr. Harlow and others complained against a boiler entered for 1000 feet being allowed to compete for 500 feet; they then stopped, but were allowed to go on again next morning for 1000 feet. I consider it very unfair all throughout. You were not allowed to go on again, although you had such wretched days for your trials. There is another thing, and that alone should have disqualified them from starting at all. Their boiler, it appears, weighs 9 cwt. 3 qrs.; the cost of that class of boiler is 6*d.* to 6½*d.* per pound, independent of sockets or anything else; that would come to £29—their price in the Show catalogue is £15 10*s.* I received a small pamphlet of rules and regulations before the Show, I daresay you got one. One rule says, 'Any exhibitor entering an article for less than its value will not be allowed to compete for a prize.' That is clearly so in this case. I enclose small sketch of their boiler, so that you can get the price of it if you like. The measurements are correct. I took them when the boiler was stripped. We ought all to raise a protest against the award.

"Yours truly

(Signed), F. J. MEE."

GARDEN STRUCTURES AND IMPLEMENTS

AT THE ROYAL HORTICULTURAL SOCIETY'S BIRMINGHAM EXHIBITION.
No. 2.

STAND No. 42 contained chiefly weighing machines; 43, sewing machines, without much horticultural interest. In Stand 44 Mr. Ryland exhibited fuel-saving fire-bars. They are economical certainly in point of weight, and for the generation of steam in steam boilers, where the combustion of fuel has to be maintained as perfectly as possible, would, no doubt, be very useful, but we much question if there would be any advantage in using them for horticultural boilers.

In Stand No. 45 Mr. E. Housman, of Perry Hall, exhibited a wrought-iron stove and fittings adapted to a brick Arnott's stove. Mr. Housman objects to the use of hot-water apparatus, as he thinks it an uneconomical way to heat one fluid as a means of conveying heat to another, and that the simplest way is to heat the air direct. No doubt this is true in theory, but not very easy to carry out in practice. A flue which would give off all the heat would, no doubt, be the most perfect form; but flues

are very cumbrous, and if put under ground very wasteful of heat, and no Polmaise system, or any system of hot air, has yet been invented in which all the heat is extracted from the fuel in the stove, and given up to the air which surrounds the stove, which air is to be conveyed through air flues to heat the conservatory or other buildings to be heated. The chimney from all stoves and hot-air apparatus must be economised as a flue, or else all the heat in the chimney, which is invariably great, must be wasted. As we have just before said, flues in conservatories and stoves are just as unsightly and more unmanageable than hot-water pipes. Hot-air stoves with flues made from 9-inch fireclay pipes, are very good for churches, &c., but the kind of heat given off is not good for plants.

We may pass over Stands 45a, 46, 46a, 46b, 46c, 46d, 46e, as, with the exception of vases and flower-pots in 46c, and dried flowers in 46d, there was nothing of horticultural interest.

Passing over the boilers we come to the horticultural structures, which were of great interest, especially to professional gardeners and to gentlemen and amateurs wishing to erect houses. There were about twenty of these houses shown by nine exhibitors; Mr. Howitt, Stand No. 2, having been the fortunate winner of the gold medal, and Mr. Cranston took the silver medal for the most complete collection of horticultural buildings adapted for general purposes. Mr. Howitt well deserved the gold medal for the very excellent house exhibited, which was also moderate in price. The especial principle of one of his houses is, that the girders are formed of ribs of wrought-iron pipes similar to 2-inch gas pipes screwed into each other, and curved to whatever shape of roof is required, from a semicircular to a pointed arch. These semicircular or arched tubular ribs support horizontal iron bearers which carry the sash-bars; the sash-bars made either of light iron or wood, every pane of glass separately framed and without laps, and condensed moisture being discharged outside. Ventilation is effected by means of small glass lights in the roof, opening either by rack and pinion, or by lever. One error in the house erected at Birmingham, which might be easily altered, was, that the upper lights, owing to the position of the curve, could not be raised sufficiently high without reversing the drip of the water, and the action of the rack and pinion was too slow; the wire rope which was used to connect the lever with the pinion is also liable to stretch and to vary too much with the temperature. The ventilation at the bottom is by means of side lights opening and shutting simultaneously by means of a lever-action on a wrought-iron tubular rod. Any of these lights can be disconnected at pleasure. There was also a permanent ventilator in the roof by means of a zinc tube carried above the house, with openings at its sides, like a T-pipe. This is likely to be very useful in stormy weather, when the upper ventilating-sashes had better not be opened.

Mr. Howitt's house was fitted-up with pipes with ventilating and vaporising troughs, invented by Mr. Taylor, Walton Villa, Aylesbury, Bucks. The system is to have troughs to contain water over the ordinary hot-water pipes, cast on the pipes. This is covered with a zinc cover, and a zinc pipe communicating with the outer air is bent into the cover at one end, the farther end of the cover being left open for the air to escape into the house after passing over the length of heated water in the evaporating-pan, from which it would receive both heat and moisture. For forcing houses and stoves this method of ventilating and vaporising must be very beneficial, especially in winter time. It would be very valuable, too, in propagating-pits.

We pass on next to stand No. 63, where one of Mr. Ayres's patent imperishable hothouses is erected. This, no doubt, has its advantages in point of durability, but we are afraid the cost will deter many from putting them up. There are some very good points about this house, especially the stages made of hydraulic cement concrete, on which the pots are placed, having evaporating troughs parallel to hold water, and holes pierced through for the air to percolate. The shelves, too, which can be screwed on to the T-shaped rafters and removed at pleasure, are very useful adjuncts. The slope of the side is good. We do not think sufficient precautions are taken against drip, and the glass, which overlaps laterally instead of horizontally, was lapped too widely. The top ventilator, too, was heavy and worked with a system of chain and pulleys, very liable to get out of order, and the lower lights opening direct on the plants were not in so good a position as if placed lower down, so as to put the bottom air on direct upon the hot-water pipes. Indeed, with the system of side ventilation by means of sashes (as a general rule so commonly adopted), we may observe, that it would be far better to have ventilation in the brickwork below the level of the stages, and Mr. Looker's ventilating bricks which we have already remarked on, will give builders a very simple and efficient way of admitting air at the bottom of the house. Mr. Ayres's expanding glass walls with glass copings on iron brackets, and to which iron rafters could be fixed to expand the house to any width required, seem to be a very efficient method of combining fruit walls with fruit houses. These were erected alongside the imperishable hothouse. There were small ventilators

underneath the stages in Mr. Ayres's hothouse, but these, we think, were not large enough.

ENTOMOLOGICAL SOCIETY'S MEETING.

THE last meeting of this Society for the season was held on the 1st inst. at Burlington House; the President, Professor Westwood, being in the chair. Amongst the donations to the library received since the last meeting was the new part of the Illustrated Catalogue of the Museum of Comparative Zoology at Harvard College, U.S., containing a remarkable memoir on the transformations of the Libellulidæ; also Mr. Scudder's new memoir on the distribution of the North American Butterflies, in which a complete derangement of the genera and their names has been made, almost every species raised to the rank of a genus, and the characters of several of the genera given, extending to five pages each. The Transactions of the Natural History Society of Moscow, and of the Entomological Society of Canada were also presented.

Mr. Jenner Weir exhibited specimens of *Agrotera nemoralis*, taken at Abbot's Wood, near Hailsham, on the 25th June; and Mr. Meldola some remarkably minute specimens of the Orange-tip Butterfly, the Magpie and other Moths; also a spotless variety of *Venilia maculata*, and a specimen of the very rare *Leucania vitellina*, taken at Brighton.

The Chairman exhibited several remarkable Coleoptera received from Ceylon, collected by G. H. K. Thwaites, Esq., the Director of the Botanic Garden at Paradisia; also the oval cocoons of a species of *Ichneumonidæ* from Ceylon, affixed at the end of a very long thread, and of a pale colour with black bands and spots; also illustrations of the habits of a species of moth-larva which cuts out oval pieces, an inch long, from the leaves of a species of *Citrus*, and forms therewith the moveable cover of a tent, beneath which it lives, feeds, and undergoes its transformations. Unfortunately the specimens had been destroyed by minute *Ichneumons* of the genus *Microgaster*, of which a number had been reared.

Mr. Albert Müller exhibited portions of the leaves of the common Fern or Bracken mined or curled-up by three different kinds of Dipterous larvae, including *Cecidomyia Pteridis*, from Weybridge. Mr. Lewis read a circular letter which had received the signature of Messrs. Wallace, Bates, Hewitson, Pascoe, Wollaston, &c., urging entomologists to ignore the adoption of names which had been long forgotten, but which it was now proposed by some writers should be reinstated, and the names in use superseded, until such time as the method of dealing with them shall be settled by common agreement. A long and somewhat angry discussion took place on the subject.

Mr. Dunning read a note published by Dr. Leconte, in the periodical "Nature," contending that the genus *Platysylla*, upon which Professor Westwood had proposed to found a new order named *Achreoptera*, in reality belonged to the order Coleoptera, an opinion to which Professor Westwood objected. The insect is parasitic on the beaver. He also read an article by Mr. Moseley concerning the real origin of the squeaking sound produced by *Sphinx Atropos*, the Death's-head Moth, respecting which not less than eleven different theories had been proposed. That of Signor Passerini had, however, been satisfactorily proved by Mr. Moseley's dissections to be the correct one—namely, that it originated in a small cavity within the point of the head at the base of the short spiral tongue, which is dilated and pressed by strong muscles, the air escaping through the narrow mouth acting as in a whistle.

TODEA WILKESIANA.

WE are told by Mr. J. Smith that this plant was discovered in the Fiji Islands by the United States Exploring Expedition under the command of Commodore Wilkes, in honour of whom it was named by Mr. Brackenridge, and it is alluded to by various members of that expedition as the "Little Tree Fern," and was stated to grow some 4 feet high. Subsequently the Fijis were visited by the late Dr. Berthold Seemann, and he found it "growing as an underwood in the mountains of Somosomo, where it attains the height of 7 feet;" and he records the fact of its being frequently found bearing several crowns, which is the more remarkable on account of its very slender stem, which, it would seem, is never stouter than an ordinary walking cane.

This species is a valuable addition to our cultivated Ferns, and for its introduction Fern-growers are indebted to that indefatigable traveller and collector the late Mr. John Gould Veitch. It is an elegant miniature tree Fern, and the effect of its long, spreading, pellucid fronds waving in the wind upon the top of so slender a stem must be perfectly enchanting. It belongs to that section of its tribe called by amateurs Filmy Ferns, on account of the extreme delicacy of

the texture of the pinnules in this plant; these are, however, much stouter than the majority of this section, and consequently better able to withstand a somewhat drier atmosphere, and we have had ample proof that it will succeed admirably in a cool temperature, which will greatly enhance its value, inasmuch as it thus comes within the reach of those who have only a fair-sized Wardian case to accommodate their pets. The leaves or fronds are bipinnate, broadly lanceolate in shape, and in large specimens about 2 feet in length; the pinnæ are oblong-lanceolate and sessile, whilst the pinnules are obtuse, dentate on the edges, and deep sea green.

This plant, like the other species of *Todea*, should be grown in a moist atmosphere, and prefers deep shade; to create the necessary moisture the fronds should be lightly sprinkled with water from a fine syringe two or three times a-day during the summer months, but, of course, this operation will necessarily be less frequent during winter, when the external air is more charged with moisture and the evaporation less rapid. The soil should be good fibrous peat, with some sharp sand mixed with it, and just a small addition of light loam to make the whole a little more solid. The pots in which the plants are grown must be well drained, on account of its delighting in a plentiful supply of water, which must not be allowed to remain stagnant in the soil, but care must be taken that it never becomes dry. If the amateur only follows the above few simple rules this exquisite little gem may be grown successfully in a Wardian case, even in the very heart of London.—EXPERTO CREDE.

WOOD PULP FOR PAPER-MAKING.

A STEADY and considerable advance in the price of rags, from which unsavoury and unwholesome materials our cream-laid note and other glossy papers are usually manufactured, has coincided with a fall in the price of paper. The apparent anomaly is easily explained. It arises that from time to time very different materials have been pressed into the service of the paper-maker. Straw is well known as the material from which a tolerably good paper is manufactured. Esparto grass (*Macrochloa tenacissima*) has been utilised to a large extent in some of our paper mills; in fact, so much so that the streams have been dyed and the fish poisoned wholesale by the foul refuse which is left in the process of manufacture. The bark and even the woody fibre of the Paper Mulberry tree (*Broussonetia papyrifera*) are used exclusively in Japan, the cunning industry of which almost unknown country produces no less than ninety distinct kinds of paper. This I can vouch for, having seen the Japanese at work during my five years' residence at Yokohama. In 1865, 70,000 tons of vegetable fibrous substance were imported by the paper-makers of the United Kingdom; and now, on the Continent, we find that wood is used in large quantities for the same purpose.

Heinrich Voelter, of Heidenheim-on-the-Brenz, in the kingdom of Wurtemberg, is the inventor of a successful method of manufacturing a tolerably clean white paper pulp from wood at a low price. It does not require bleaching. He has, I believe, obtained patents for his process in almost all European countries and America. It is adopted by all the large paper-manufacturers of France, Belgium, Germany, Switzerland, Norway, Austria, and Canada. A single paper mill in Germany consumes yearly 500 tons of wood pulp, and scarcely a newspaper is printed in Germany which does not contain some proportion of this material.

The cost of paper pulp produced from wood is stated to be nowhere more than half the cost of rag pulp, and considerably less where there is a good supply of wood, and water power to drive the machinery. If of inferior quality as regards what is called the luxury of paper, the article thus produced from wood is tough, but serviceable and well adapted for printing. By mixing wood with rag pulp in various proportions, papers of different sorts may be produced at moderate prices. For printing papers, either white or coloured, from 30 to 70 per cent. of wood pulp is mixed with that produced from rag fibre; 35 per cent. of Pine wood pulp gives a common tinted drawing paper; from 30 to 50 per cent. of wood pulp serves for writing papers of various colours, the latter proportion of Pine wood pulp being used for an ordinary blue letter paper, which takes the ink easily and is pleasant to the touch of the pen. Coloured papers for book wrappers, tissue papers, paper hangings, card-boards, are all produced by similar instances in various proportions. No single article of manufacture can be taken as a more distinct test of the state of civilisation than paper. Be-

sides all those subsidiary purposes of wrapping and packing, the direct use of paper for the spread of intelligence for the communications necessary to commerce and for the service of literature need only to be hinted at. The reduction of cost of this necessary is thus one of the many boons to mankind.—H. B. E.—(*English Mechanic and World of Science*.)

NEW BOOK.

My Garden, Its Plan and Culture; together with a General Description of Its Geology, Botany, and Natural History. By ALFRED SMEE, F.R.S., &c. London: Bell & Daldy.

HITHERTO we have only noticed Mr. Smees book in its relation to the ornamental features of his garden and its surroundings; but that he does not neglect the useful we give the following extract as a proof. It refers to the alliaceous plants which he cultivates. He says:—

"We grow four distinct crops of Onions (*Allium Cepa*). First of all we have the Underground Onions, which are planted in January, and yield their crop in June. A single tuber is planted, which gives four or five new tubers. They are useful for ships going abroad at that season of the year, but the tubers do not keep well, and this crop may be dispensed with. The second crop is raised by sowing seed from the middle to the end of August. The plants live through the winter, afford young Onions through the spring; and the remainder, being either thinned or transplanted into rich soil, produce by August fine bulbs. These Onions attain much larger size if the soil between them is stirred and small quantities of guano be given to them.

"The best kinds for this purpose are the Flat and Globe Tripoli, the Rocca, and Spanish Onions. We have grown the Globe Tripoli nearly 2 lbs. in weight, but at Naples they have attained nearly 4 lbs. in weight. The third or main crop is sown in March, and when ripe is stored for winter use. The Spanish and Blood-red are best for this crop. The fourth or last crop is cultivated to produce little tubers for pickling. Our soil is not well adapted to produce little Onions, and we succeed but badly with them, probably from its being too damp. The cells of the skins of Onions have crystals in them, which may be seen when examined under the microscope. We have occasionally had the Tree Onion, a variety which produces little Onions at the tops of stalks. They are coarse and strong, and of no horticultural importance.

"We always cultivate the Leek (*Allium Porrum*), which is a



Globe Tripoli Onion, one-third diam.



Leek.

choice vegetal in early spring. It is the hardiest of all the hardy plants of the garden, standing the severest frost with impunity.

Books tell us how to grow large Leeks, but what is to be done with them when we have obtained them? Leeks for the table should be about an inch in diameter, and about 6 inches long: they are valuable in January, February, March, April, and beginning of May, when other fresh vegetables are scarce. We sow the seed broadcast in March, so as to have plenty of small Leeks, rather than a few which are larger. The sorts which we employ are the London and Musselburgh, and they require no further trouble in their cultivation than hoeing and weeding after having been sown."

NOTES AND GLEANINGS.

OPEN GARDENS.—The experiment of an open garden for the public is about to be tried by Lord Westminster, who proposes to lay out and plant the space now enclosed in Ebury Square, and to remove the railings. If the arrangement prove a success, other squares will, no doubt, in due time be also thrown open, and a new feature of a pleasant description be introduced into the aspect of London. Ebury Square is in all respects a fit subject for an experiment of this nature. It has for some time shown a tendency to follow the downward path of Leicester Square, and has been allowed to fall into such a state of neglect as to become an eyesore to the neighbourhood. There are also numbers of poor children in the district to whom an unenclosed square will be an inestimable blessing. Ebury Square was originally Lammas land. It formed part of Eybery Farm, leased by Queen Elizabeth to a certain Mr. Whaske for £20 per annum, who, according to Strype, sublet it to "divers persons, who, for their private commodity, did enclose the same, and had made pastures of arable land, thereby not only annoying Her Majesty in her walks and passages, but to the hindrance of her game and great injury to the common, which at Lammas was wont to be laid open."—(*Pall Mall Gazette*.)

—THERE is now to be seen in the great conservatory of the Royal Horticultural Society, at Kensington, a magnificent pair of AMERICAN ALOES in bloom, and, probably, such a match has seldom or never been seen in this country.

—WE omitted, in the notice of Mr. Laxton's new PEAS DR. HOGG in our last week's publication, to state that it was one of several others of Mr. Laxton's seedlings which received first-class certificates from the Fruit and Vegetable Committee of the Royal Horticultural Society.

—WE have to record the death of Mr. RAMSAY, late fruit-tree foreman to Messrs. James Veitch & Sons, at the age of 71. For the last few years Mr. Ramsay has resided at Leicester, where he died only a week after being elected a pensioner of the Gardeners' Royal Benevolent Institution.

WORK FOR THE WEEK.

KITCHEN GARDEN.

WEEDS must not be allowed to seed amongst growing crops, such as Potatoes or Asparagus, where, from the luxuriance that surrounds them, they are apt to elude detection till they have deposited their seed. Attention in proper time to such a matter does not entail one-tenth of the labour that neglect ultimately does. As soon as caterpillars attack any of the Cabbage tribe, give them a slight dredging with White Hellebore powder in the morning. Make a sowing of *East Ham Cabbage* for early spring use, and the last sowing of *Coleworts*. Pay strict attention to early crops of *Celery*; let it be gone over by hand, all the offsets taken off, and, where practicable, let it have a thorough drenching with dung water, after which, on the following day, give it a slight earthing to prevent evaporation. Always remember that this plant in a state of nature is aquatic. Plant out succession crops. Where *Garlic* and *Shallots* are ripe, take them up and hang them in bunches in dry sheds previous to placing them in store for use. Make a small sowing of early *Peas*. If the autumn prove fine they may be very useful, and if they fail the loss will not be very great. Continue to stock every spot with winter stuff, including sowings of *White Stone Turnips*.

FRUIT GARDEN.

Strawberry runners that were layered some time ago in 3-inch pots are now ready for shifting into 5-inch ones; for this purpose prepare a compost of two parts of friable yellow loam and one part of well-decomposed dung, with the addition of the tenth part of the whole of charred material. Take care that the pots are well drained, and have them placed in a south aspect on boards or slates raised a few inches above the surface of the ground, to prevent the worms finding their

way in. Pay general attention to gathering and retarding other sorts of fruits. Follow up the system of shortening and stopping, as already recommended. Shoots of Pears may now be headed-back to three or four eyes. In regulating shoots, remember it is important that each should enjoy a due exposure to the influence of the sun. Stop and thin Raspberry suckers, &c.

FLOWER GARDEN.

I must again direct attention to former calendars. Let nothing be allowed to grow out of place, but attend to the wants of growing plants by giving them their proper support and training at this season; this will take up a considerable portion of time. The next thing requiring consideration will be the propagation of stock for another year. In commencing with *Pelargoniums* employed for bedding purposes, raised beds of sandy soil will serve to strike the *Scarlets* and their allies, whilst the *Fancies* and other kinds with a delicate habit will be better in pots, or, where large quantities are required, in a frame under glass. Under any circumstances they will require protection from heavy rains. There is a class, of which *Sidonia* is one, which strikes with difficulty from cuttings of the shoots, and is best propagated by root-cutting; prepare cuttings of the thickest roots about $1\frac{1}{2}$ inch in length, which should be inserted in shallow pans and plunged in a frame. The oldest plants should be selected for the purpose. Herbaceous plants and hardy bulbs now in full beauty should be kept in order by tying-up loose growths and keeping the ground free from weeds. Novelties should have their colour, habit, time of flowering, marked down as a guide for future arrangements. Finish the propagation of any choice subjects not yet in, and continue the layering of *Cloves*, *Carnations*, *Mule Pinks*, &c., of which there is rarely an overstock. The cutting-in of *Laurels* and other loose-growing shrubs should be proceeded with as time permits, and strict attention enforced in keeping the lawns and gravel walks in neat order. *Ranunculus* tubers should be taken up forthwith; should any remain in the ground they would inevitably strike fresh root after the first heavy rain. Let them be gradually dried in the shade. Plant out rooted *Pink* pipings on well-prepared beds, examine them occasionally to see whether they are uprooted by the worms. *Carnations* and *Picotees*, when grown in pots, it is advisable to remove under an awning, where they can be examined at leisure out of the broiling heat of the sun. *Dahlias* require abundance of water; disbud and thin-out as the habit and constitution of the plant require it.

GREENHOUSE AND CONSERVATORY.

Let adequate precautions be used to protect the tender greenhouse plants placed temporarily out of doors from the effects of the frequently-recurring storms of wind and rain. Screens may be advantageously employed, all stakes and supports should be proved, and the pots closely examined, lest the plants suffer from defective drainage or the presence of worms. The young reserve stock for filling blanks in the stove should be sedulously encouraged by progressive potting and a warm equable temperature. *Gesnera zebrina*, *Plumbago rosea*, and *Torenia asiatica* will amply repay attention bestowed on their culture; decayed *Beech* leaves with a mixture of sharp sand form a compost peculiarly suitable to the first-named plant. Cut down *Pelargoniums*; pot-off cuttings directly the roots are formed; repot those plants previously headed-down; as soon as they begin to break, propagate by cuttings. Shift and sow *Cinerarias* and *Caleolarias*. Sow *Mignonette* for winter use. The stock of pot *Roses* should be looked over, useless wood and decayed blossoms removed, and the plants shifted. *Camellias* which have matured their flower-buds may receive additional assistance either by soil or manure water as circumstances allow. I have previously adverted to the advantage derived from giving plants some kind of rest after blooming, to restore their exhausted energies, and to enable them to make a vigorous start when the new growth commences. At this season of the year greenhouse plants done blooming should have a comparatively cool temperature, and no structure presents so many advantages for the purpose as a house with a north aspect. I may further state that for growing delicate-leaved plants through the summer, houses having a north or north-east aspect are preferable, while for the purpose of retarding plants, or for preserving them in bloom, they are indispensable. Such plants, therefore, as *Epicarises*, *Leschenaultias*, *Pimeleas*, *Aphelexis*, and others of similar habit which have been kept for late bloom and are now over, should be placed in a house of the above description, or in deep frames with the sashes turned towards the north,

having first picked off the old remaining blooms. Here, by gently syringing once or twice daily, the plants may remain till a new growth commences, when any pruning they may require may be given them, and they may afterwards be placed in more favourable positions for ripening their wood. *Camellias*, whenever the young wood appears to be ripe, may be removed to the open air; they thrive best in the shade, and a situation shaded from the mid-day sun and sheltered from high winds should be secured for them; be careful to place them on a dry bottom to prevent the possibility of worms getting in. Chinese *Azaleas* which are equally forward in their growth, and have formed their next season's flower-buds, may likewise be turned out. Unlike *Camellias*, the latter require full exposure to sun and air, and should be placed in an open situation that their wood may become thoroughly ripened; it will, however, perhaps, be necessary to place them for a week or two in a partially-shaded situation to harden their foliage sufficiently to bear the full sun, as the sudden change from a house to bright sunshine might cause their leaves to turn brown and burn. Orange trees, when too full of bloom, should have the flowers thinned-out. These are always in request for drying or distilling. The young fruit, when too thickly set, should likewise have a thinning, as a few will be sufficient to remain. To produce dark glossy leaves, water with clear soot water.

STOVE.

A number of *Orchids* will by this have made their growth and may be removed gradually to a drier and cooler atmosphere. Those which still continue growing must have the syringe two or three times daily, and a humid air maintained by well watering every vacant part of the interior. At the same time growing plants on blocks, or suspended in baskets, should be frequently soaked to effect the complete moistening of the growing material. Some young plants which it is desirable to lose no time with may again have a shift. They have had a short rest since the spring growth was completed.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

THE weather has been very trying—so cold and then so hot, and the extremes have been so sudden that many crops suffer much, and require more than ordinary care.

Cauliflowers.—We have never had two or three lots in succession finer. That which ought to have come in now has disappointed us; the plants looked all right, but most of them refused to head, making an abortive attempt in something like corkscrew fashion, and yielding little but leaves. We are not sure of the cause, and we find we are not the only sufferers at a time when *Cauliflowers* ought to be in perfection. At one time we put some of the blame on the wood pigeons, which did much damage by picking out the points of the plants as being the tenderest. We do not consider that these, bad as they were, did all the mischief, as we have had to pull up scores, if not hundreds, of young *Cauliflowers*, and even winter vegetables, which seemed perfect when planted, but which have lost the terminal bud. Cottagers have suffered terribly round here. We have looked over several very promising seed beds of winter stuff, and in too many cases found more than half the plants so deficient at the points that it would only be waste of labour and ground to plant them out. The lesson to be learned is simply this: Examine the points of all greens before planting them out. We hope the evil is chiefly confined to this district. We have heard of some fields of *Cabbages*, grown for feeding and market purposes, that have suffered in the same way.

Winter Crops.—As soon as we have ground at liberty we fill it with *Broccoli*, *Borecole*, *Brussels Sprouts*, *Savoy*s, *Asparagus Kale*, &c. Of all the *Kales* none beats the *Scotch Cabbaging*, as it is dwarf and very prolific of shoots in the spring. *Veitch's* is also very good.

Turnips needed thinning. The first crops have done very well. We grow less of them than we used to do, as we find small white *Turnips* from the field, as soon as they can be obtained, are sweeter than those generally grown in old, rich garden ground. But that we must have them, we would say the same of *Carrots* and *Parsnips*; they are always sweetest when grown in a fresh field. As there seems to be a rage for running down and lessening kitchen gardens, though nothing would pay better at market prices, it is well to know that many things might be better grown in fields than in gardens, and,

singularly enough, the plants suffer less in the field from natural enemies than they do in a garden. Just place a wall, a fence, or a long stretch of netting round or over some favoured vegetables and fruits, and you will have many more interlopers to see what all this care means than would trouble you in an open field.

In connection with Turnips, we may mention, for the benefit of those having miniature gardens, that all sorts of Turnips may be planted as we lately noticed for transplanting Onions—that is, without burying the “bulb.” Where fly is troublesome successions may be secured with least trouble by planting out. From one sowing we have often thus had three successions. Sowing, however, is the easiest method, but for the fly. A little soot and ashes will help to keep it away, but the simplest and best remedy we ever found when sowing small pieces of ground at a time, was to cover the soil some 3 inches from the surface with old hurdles, through which spruce branches retaining a few of their needle-like foliage were thinly drawn. The fly seemed to abominate the smell of the spruce.

FRUIT DEPARTMENT.

The wet and then the tropical heat threaten soon to put an end to our general Strawberry crop out of doors. As late varieties, we find Frogmore Pine and the Elton very good and productive, though the latter is rather acid. We regret we had not a lot of our forced plants turned out earlier, as we should ere long have had an autumn supply. We shall proceed to layer and prick-out for forcing.

All dwarf pyramidal trees after the rains and the hot weather will require pinching.

In orchard houses much watering was needful, and to avoid that a little shading was afforded in the hottest days. Besides as much air as we could well give, additional care was taken to damp the floors and stages, even if the latter had nothing on them. This, to a great extent, saved watering, and preserved a healthier atmosphere about the plants.

ORNAMENTAL DEPARTMENT.

The rains saved us from the necessity of mulching our Calceolarias, but if this weather last we must do so on the 21st, in order to keep them luxuriant with but little or no watering.

We need say nothing of lawns, further than they want constant cutting and rolling.

All plant houses have been kept cool by shading the glass on roofs with whitened water, and sprinkling the ground and pathways with water as far as we durst expend it. The frequent showers have given us a fair supply of water. We gave manure water to Chrysanthemums, Fuchsias, and all plants growing freely. “Not too strong at a time” is the maxim of safety. Potted Primulas, Cinerarias, and Poinsettias. Small plants of florists’ and Scarlet Pelargoniums are now coming in useful for baskets. Climbers are now very useful in houses if not allowed to become too dense.

Window Plants require extra attention. As a rule, in summer they do best in boxes outside, either planted out or the pots plunged in earth, sand, moss, or cocoa-nut fibre. This plunging greatly economises watering, and keeps the roots more comfortable and cool. If the plants must stand in pots, they will thrive much better if the pot containing the plant be put into one a size or two larger, and the place near the rims of both stuffed with paper, shavings, moss, or any non-conductor, and that stuffing at the rims will be better than if you stuffed all the way down, as the confined air between the pots becomes then the best of all non-conductors. To make this arrangement still more perfect, the outer pot may stand in a shallow pan of water, as that will not be high enough to reach the bottom of the inner pot. With such care success is certain, and yet it is attended with more trouble than planting-out or plunging. Even our hardy annuals, as *Nemophilas*, *Collinsias*, *Erysimums*, and *Larkspurs* are exceedingly beautiful grown in pots and plunged in a box, and they can be easily lifted out and replaced. A few pennyworths of seed would make many a town-garden window lovely. *Geraniums* and *Fuchsias* also do well, but cost a little more at first. We have helped to grow, and have seen these *Pelargoniums* in fine order in the most smoky part of London, kept inside the window in winter and outside in summer. There were three conditions of success—namely, under-watering in winter, but a free use of sponge or fingers to keep the foliage clean; a similar use of the syringe and sponge to the leaves out of doors; and, when it could be at all managed, fine muslin to put over them occasionally to keep them from dust and soot in winter, and to keep off the scorching rays of the sun in summer.—R. F.

TO CORRESPONDENTS.

* * We request that no one will write privately to any of the correspondents of the “Journal of Horticulture, Cottage Gardener, and Country Gentleman.” By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

N.B.—Many questions must remain unanswered until next week.

SALADS OR VEGETABLES.—*Nemo* asks, May Celery, Cucumbers, and Lettuces be exhibited in a collection of vegetables, as well as in the class for salads? They are certainly salads, but have always been exhibited in collections of vegetables, and it would be unfair, without previous intimation, to disqualify the competitor who included them in vegetables.

PRIMULA JAPONICA (M.).—Pans containing an inch of drainage, an inch of rough compost, and the rest of fine soil—two parts loam, one part leaf mould, and half a part silver sand—are those in which the seed should be grown. Cover the seed lightly, water gently, and place the pan in a cold frame near the glass, but shaded from the bright sun to lessen the need for watering. The imported seed is often six or eight months in germinating, or even more, so do not lose patience; keep it in a cool place until it comes up, and then admit abundance of air; keep the plants near the glass, and give enough water to keep the soil moist. When of sufficient size prick them off into small pots, grow them in a cold frame or cool airy shelf in a greenhouse, and shift them into larger pots as they advance. Shade them from the bright sun in summer, but give them light and air in winter. You will find all you require about greenhouse plants in the “Cottage Gardeners’ Dictionary.”

DOUBLE SWEET WILLIAMS.—“A. B.” writes to say that he has about twenty-three varieties of double Sweet Williams, which are very fine, and he wishes to know if there are any such things already in cultivation.

ROSES (J. Robson).—If dwarf Hybrid Perpetual Roses on the *Manetti* stock are doing well do not remove them; let well alone. If they are not doing well, remove them. If they run to vigorous growth and do not produce their autumn bloom, remove them and cut back their roots to the general radius. By removal you may impede their making Rose roots. *Manetti* Roses after they have been planted two or three years usually have, besides the *Manetti* roots, Rose roots also. For vigorous growers suitable to sandy or light soil, see page 47. *Mari* added to the sandy soil will greatly improve it.—W. F. RADCLIFFE.

LIMESTONE WALLS (A South Ireland Subscriber).—The limestone walls will produce quite as good fruit as those of brick, and they may also be wired, provided the joints are not too wide. You may cut down your Roses in autumn to one-third of their present length.

VINES DISEASED (R. H. F.).—Your Vines are in a sad plight, being overrun with red spider and badly scalded. To get rid of the spider syringe abundantly about every third day, and to check the scalding give plenty of air, and keep the borders protected from too much moisture.

GARDENERS’ HOURS OF LABOUR (W. D. P.).—From 6 A.M. to 6 P.M. are very common hours. Under gardeners who live on the place are generally expected to do anything that may be required earlier and later than labourers who come from a distance, as many kinds of work cannot be done in the heat of the day. In fact, it would often be well to give up some hours at midday; that, however, would rarely suit labourers. Our general rules now for labourers in the garden are from 6 A.M. to 5 P.M., and pay extra for overtime. No regular rule as to hours exists.

PORTABLE PIT (A. B. C.).—We should in the first place add your single light to the four, so as to have the place all in one. Secondly, if you could sink deep enough for a pathway and headway, your simplest plan would be to use your frame as it is, and then there would be no trouble in moving it. You could have one of the small portable boilers fixed either outside or inside, and from that have pipes for bottom heat and top heat. Your proposed plan of using your 7-feet lights for the south front, and fluted glass for the hip at the back, is a much better idea. There is no difficulty in having it portable if all of wood. Eight pieces of wood—four at the corners and four at intermediate spaces—say 2 feet long and 4 inches square, would support the ground sill above the soil; and upright studs could be fastened to these and to receive the plate in the usual way, to come out easily at the mortice or to be fastened with wooden pins. The boards could be screwed to the studs and easily moved and packed. The chief difficulty as regards expense is that you will require something in the way of wood to keep up the sides of the pathway in the house. To obviate this, as you have already sunk from 2 to 3 feet for a hotbed we would sink no more, but raise the house high enough to command 6½ to 7 feet at the ridge, and then the top of your Cucumber or propagating beds. You could thus have beds separated from the pathway merely by an edging of a slip of wood. You would have to sink your portable boiler low enough to get pipes in the bed for bottom heat, surrounded with any open rubbish, as clinkers, brickbats, &c.; or you might cover over a chamber with common slates laid loose. But for not wishing to use bricks, we would have heated such a small house with a brick stove so placed as to get bottom heat from a chamber and let top heat out at pleasure. A moveable small boiler will be the easiest managed. We may state that 1-inch board is as good for keeping in heat as a 4½-inch wall. If you used rough boards you could cover with felt and tar at the outside. Ventilate by four openings in front, and moveable squares at the apex of the roof.

PROPAGATING SWEET BRIAR (Gleum).—Sweet Briar is raised from seeds obtained from the hips; it also furnishes suckers from the roots, but the former method is the more common. If you have no seeds by you, cutting a plant down will most likely encourage the production of suckers, which you can take off in winter.

TRAINING YOUNG OUT-DOOR VINES (Idem).—It would have been better had you trained your 9-feet cane horizontally along the bottom of the wall instead of running it straight up, as you might then have trained as many shoots as you liked in a perpendicular direction, and covered the whole of the wall. It would also have been better to have shortened the cane. Now it is difficult to give advice without seeing the plant, and you must let it remain as it is this season, but at the autumn pruning, contrive to bend the main stem and its shoots of the present year, so that they may start from the bottom of the wall

and occupy the whole of it. Upright rods left 2 feet apart at the winter pruning do very well in general, or they may be farther apart if the plant is robust, but the Vine is so accommodating that it may be trained in any way; so that if you can only secure healthy foliage, neither too gross nor too weak, you may generally command success in favourable seasons, yet in those which are adverse the most skilful can only partially do it out of doors.

IVY BORDER (Sweeney).—As you do not mention whether you want the green or variegated form of Ivy, we conclude it is the former. Cuttings inserted now will make good plants by next spring if shaded after they are put in. The hardness of the plant and its accommodating nature are such that but little preparation of the soil is necessary; at all events do not enrich it too much, otherwise the growth will be too gross for the purpose. We should recommend you to have one of the dwarfest varieties of trailing Ivy having green leaves—not veined with white or grey, as the leafstalks of such are not so long as in the Irish and other large Ivies. If you have not plants to fill your ground at once you might crop it with annuals for a time, training the Ivy over as it grows. In our own case we have large breadths of Ivy in some half-dressed grounds under trees that look remarkably well, although they receive no attention beyond cutting with a scythe or hook such weeds as may find their way through it during the summer, and such will be few. We would not recommend an Ivy edging of less than 2 feet wide, as we think too much cutting destroys the effect which this plant ought to have. When it has been established some years and seems getting higher than is agreeable, a severe cutting-down in April will be beneficial.

TRIMMING BOX TREES (Idem).—Tastes differ in such matters, and we prefer trimming with the knife, so as never to give that clipped appearance of which you complain. We have some very good pyramids, or rather cones, which have taken their teens of years to arrive at their present condition; these we generally clip, or endeavour to clip, in moist weather about the end of June, so as to allow time for a short growth to take place afterwards, in order to remove that rawness which close cutting inflicts. We never heard of any other rule of cutting to accuracy than by the eye. A line may be used with a hedge, but experienced hands do without that, and in general gardeners exceed mechanical men in operations where the rule and line are dispensed with; for it is seldom we meet with a builder who can manage a curved wall, unless it be a portion of a circle, while to the skilful working gardener slopes, levels, curves, &c., are managed with tolerable exactness by the eye alone.

YEW HEDGES (Idem).—So long as your Yew hedge does not get beyond the proper height you need not cut the top. We prefer the appearance of a Yew hedge rising, as it were, into maturity; but as it ultimately will have to be cut at top, it may be done at the same time as the sides.

POINSETTIA (Idem).—The sooner your plants cease growing and partly ripen their wood the better, as they ought to rest in a cool frame, or even in the open air in August.

PLANTING AN ACRE OF ASPARAGUS (Sheels Morgan).—It is very difficult to say what would be the cost of preparing and planting an acre of Asparagus, and still more so to give an idea of the probable return, as competition in market gardening is as close as in everything else, and Asparagus and all other plants are now only grown on land perfectly suited to each respectively. We therefore meet with a district perhaps entirely Strawberry, another Broccoli, and so on; and as the cost of transit to market from great distances has been lessened considerably of late, the farthest corners of the kingdom contribute their share to the wants of the great metropolis. If the soil you have to deal with is not naturally suitable for Asparagus, you cannot make it fit for that crop, excepting at a cost which renders profit very uncertain. As a general rule Asparagus likes the rich alluvial soils found on the margins of tidal rivers, such as appear to have been submerged at some period not very remote. A deep sandy loam well enriched with manure suits Asparagus best, and if the ground is perfectly dry we would plant in rows 2 feet apart by 1 foot plant from plant in the row, and omit every fourth row.

REMOVING VINE SHOOTS (Nemo).—Your Vines planted last March, and which had all the eyes rubbed off but two, from which there are now two shoots, should each have the weakest of the shoots removed without delay. There is nothing to fear on the score of bleeding, as Vines do not bleed when they are in leaf and in free growth. The old rod may, of course, be cut away at the same time.

MUSHROOM-BED FAILING—GRAPES SHANKING (A Scoot-Saxon).—We do not think the failure of the Mushroom-bed attributable to the cause you name—viz., overheating by placing hot dung on the top of the bed, especially as you say the heat did not exceed 100° at the surface; the bed when soiled could not have been heated to a higher temperature than 90°, which will not destroy the spawn. We think the failure was owing to sudden heating in consequence of placing the hot dung on the bed, and the sudden cooling by the entire removal of the dung when at a strong heat. The materials of which the bed is formed will not be good for mixing for a new bed, which should be fresh.

PEACH BUDS FALLING (Idem).—The Peach trees are in bad health, especially as they have all bloom-buds along the young shoots, with a wood-bud at the end only, so that you are unable to shorten them without their dying right back. We advise you to remove the soil from about the roots as soon as the leaves have fallen, replace it with some strong turfy loam well enriched with old cow dung, and give a good mulching of fresh cow dung during the growing period, also watering with liquid manure. Thin-out the weak shoots, and we have no doubt you will secure stronger wood, the buds from which will not fall if red spider be kept under, and the trees otherwise properly treated.

GRAPES SHANKING (Idem).—We attribute the shanking to the roots of the Vines being in a cold and wet border. See to the drainage. The sandstone in the border is beneficial rather than otherwise; and we think if you were to encourage more foliage the shanking would be lessened if not entirely disappear. (A Subscriber, Redruth).—Apply the same renovating practice to your outside border as you have done to the inside, and you will not be troubled with your fruit shanking. The new border of last year appears to have been very successful.

SHORTENING VINE LATERALS (M. H. B. L.).—We should stop the laterals now to the first leaf above their origin, or to that next the rod, first removing those from the upper part of the cane, and following with the others gradually at intervals of three or four days, so that the removal of the laterals will occupy about a fortnight. The Vines will break again from the laterals; stop these at the second leaf, and if they break again stop them to one. When the leaves begin to turn yellow cut off the laterals close to the cane, and when the leaves are off the Vines prune at once.

WINTER-FLOWERING STOVE AND GREENHOUSE PLANTS (Idem).—Stove

Plants: Poinsettia pulcherrima, Euphorbia jacquiniiflora, Aphelandra aurantiaca Roezii, Eranthemum pulchellum, Burchellia capensis, Clerodendron Balfourii, Dalechampia Roeziana rosea, Francisca calycina major, Imantophyllum miniatum, Monochostum ensiferum, Manettia bicolor, Passiflora princeps, Thyrsacanthus rubilans, and Torenia pulcherrima. **Greenhouse Plants:** Acacia oleifolia elegans, A. armata, A. pulchella, A. platyptera, Bouvardia floribunda, Coronilla glauca, Correa Brilliant, Magnifica, cardinalis, Cyclamen persicum vars., Cytisus racemosus, Epiphyllum vars., Eutasia floribunda, Habrothamnus fascicularis, Luculia gratissima, Magnolia fruticosa, Erica hyemalis, E. colorata, E. gracilis autumnalis, E. melanthera, and E. Wilsoni superba; Euphoris The Bride, miniata splendens, hyacinthiflora, Eclipse, and delicata. We presume that you may still do so, but they will not be of use next winter. Begonias are fine subjects for winter flowering in the stove; good sorts are fuchsoides, Ingrami, insignis, nitida, hybrida multiflora, and manicata. The Salvia should be shifted into larger pots, and their growth encouraged up to September. Plant out Salvia patens in the open ground, and take up after the first frost. It will flower late in summer. Solanums will fruit out of doors, but should be placed under glass before frost.

PLANTS INFESTED WITH RED SPIDER (R. S. S.).—The leaf you enclosed is infested with red spider. Draw the leaves through a sponge wet with a solution of 3 ozs. of soft soap to a gallon of water. This should be frequently repeated; also keep the plant moist, and syringe freely, especially in the evening. No Rose leaf reached us, but from what you say we have no doubt the Rose is infested with red spider. We should lay the pot on its side and syringe the plant on the under side of the leaves, turning it round, so as to thoroughly wet every leaf, especially on the under side. The leaves falling may be due to the attacks of this pest, also from want of water. Your Rose may be the Bourbon Marguerite Bonnet, fleshy white, or Noisette Margarita, yellow, or Hybrid Perpetual Marguerite de St. Amand, shaded fleshy pink. We should shift it into a larger pot in September, set it out of doors in the meantime, and keep it well supplied with water. Remove it to a cold pit or house in November, keeping it rather dry, and in January prune and place in the greenhouse, removing the surface soil, and top-dressing with rich fresh compost.

PEAS MILDEWED (J. T. S.).—It is a very bad case of mildew—which we think would be overcome if you were to water well with a solution of 1 lb. guano, and half a pound salt to twenty gallons of water, not immediately on the roots of the Peas, but in a trench or drill on each side of the row at 9 inches or a foot from the stems. Fill the drill with the liquid, giving a good soaking. We would further advise you to thoroughly trench the ground, so as to deepen the rooting medium, adding manure liberally, and before sowing apply a dressing of salt and guano, one part salt to two parts of guano. A peck will be sufficient for a row 60 yards long, sprinkling to the width of a foot where the row is to be, and then drill for the Peas in the usual way. Instead of 4 feet we should have the rows 6 feet apart—in fact we have some rows that are fully 6 feet from each other.

MELONS NOT SETTING (Idem).—The Melons not setting we should attribute to the free growth of the plants, which we should check by not watering as long as they are not distressed; and keep the vines thin so that the leaves and embryo fruit and flowers may be exposed fully to light and air. Stop at a joint beyond the fruit, giving a liberal watering just before the flowers open, but so as not to wet the surface of bed more than can be helped. We think they would set freely if you could line the bed so as to maintain a good bottom heat when the plants were in bloom, and if you were to impregnate the female flowers, leaving a little air on at night, so as to have the flowers dry, for condensed moisture is apt to settle during the night in dung frames. Your labour under a disadvantage in employing new seed. We like that two or three years old. The plants do not go so much to leaf, and as a consequence are more free-bearing.

ROSES (K. M. R.).—Your Roses are attacked with mildew; dust them when the dew is on, or when they are otherwise damp, with flowers of sulphur, not ground sulphur. (B. B.).—The same reply is suitable to your case. (J. G. S.). If you procure your Roses in pots you may plant them in your greenhouse at any time; if out of pots, plant them in November. You will find Gloire de Dijon and Marechal Niel well suited to plant against a house from November till March. (F. J. and Nantwich).—We answer these two queries together, as both the Rose leaves and shoots sent were similarly affected with orange fungus and black mildew. In the case of "F. J." we have little doubt the disease is due to the soil being too porous. Nothing has a greater tendency to induce the disease than too great dryness at the roots; and though this moist season ought to have been almost sufficient to check the disease, yet in light soil deeply trenched the evaporation is so rapid, that two or three days' hot dry weather, with a scorching sun, would be quite sufficient to establish the seeds of the disease; and as it seems to spread by a kind of mycelium or fungus spawn, if once it begins it is difficult to check it. The leaves sent from "NANTWICH" seem to have suffered from the action of smoke, or some chemical works as well. In both cases we should try to counteract the evil by a mulching of good manure, and by dusting the leaves with sulphozone, or syringing with water having 1 oz. of sulphate of iron dissolved to each two gallons of water. Nothing seems to have the power of checking the spread of the spores of all kind of fungi more than sulphur; but sulphur does not seem to act unless it is in combination with oxygen, or in some soluble form. Watering with liquid manure, or the slops of the house, will help to check evaporation in the case of porous soil like that of "F. J." We should advise him to try Roses on their own roots, as being less liable to the disease. We do not recommend him to try constant watering little at a time. It is far better in any kind of ground to give a good soaking, and wait to repeat it till the ground is dry again.

POT ROSES TO BLOOM IN MAY (Humble Subscriber).—Much depends on the size of your plants. If they are good established plants in large pots, we should not report them till just before starting them in the spring. If the plants are small, and in pots less than 8 inches in diameter, we should report as ones, and plunge them in a border in the kitchen garden with a south aspect, so as to get fresh growth now and ripen the growth before the winter, so as to enable you to cut out all weak wood, and to cut back the strong growth made this autumn for spring blooming. If not potted till the spring the shift must not be large, and it is better to pot early and start forcing slowly at first; it does not do to hurry the growth of Roses through too much heat, it only leads to thin petals and weak blooms. Give plenty of air and light, and do not be afraid of the watering-pot and liquid manure.

BOUQUETS (An Amateur).—See what "D. Deal," says to-day on the subject of bouquets at page 73.

CAPSIUMS (*Col. Grove*).—We believe the Prince of Wales Capsicum came originally from Brazil. The Bird's-eye Chili can be got from most of the seedsmen.

NAMES OF PLANTS (*G. Mc. A.*).—No. 1 is *Polystichum Lonchitis*; and No. 2, *Cystopteris fragilis*. (*George*).—No. 1, *Convolvulus tricolor*; the other *Chrysanthemum coronarium*. (*G. Williams*).—*Hedysarum coronarium*. (*Thomas Bush*).—*Francoa appendiculata alba*. (*T. Turner*).—*Lycopodium atroviride*. You have not numbered each of the other three, consequently we cannot refer to them. (*A. C.*).—1, *Campanula persicifolia*; 2, *Oxalis corniculata*.

POULTRY, BEE, AND PIGEON CHRONICLE.

WHICH IS THE BEST BREED?—No. 4.

In my last paper on this subject I considered the case of those many readers of the Journal who could only keep a very few fowls in a very small space, and who therefore needed a breed which could both be kept in close confinement, and would give no trouble from sitting propensities. Let us now consider people in different circumstances.

Some of the breeds already mentioned, with the purchase of a few sitting hens annually, which can be returned or killed when done with, may be also the best for some of these. Thus, with a good grass range, it will be hard to beat the Hamburgs at egg-production, compared with the amount of food consumed, as I am decidedly of opinion, from all I have been able to gather, that with a pretty fair-sized flock an annual average of nearly two hundred eggs may be obtained from each fowl. The Leghorn will also be a most useful fowl in such a range, and so will the Houdan; but either of these three, on grass, will beat hollow in profit either the Polish or the Spanish fowl. Where both a fair supply of eggs and also chickens for market are desired, but the demand for the latter is but moderate, few breeds can surpass the Houdan, retaining the pullets for laying, and killing off the adult fowls and the cockerels. These last make their weight at an early age, and the flesh is of first-class quality, and will bring credit in the market.

If, however, the hire or purchase of broody hens is objected to, or if a steady regular supply of chickens for table is desired, other breeds become preferable. Where a public market is the chief object, I need hardly say that as a chicken-producer no fowl will equal the Dorking, if good range and a dry soil allow of its being kept. In the London market, especially, no fowl will realise such prices as this old and favourite breed; and on a dry, particularly if a chalky soil, there is really no difficulty in raising the chickens. The special advantage of this breed, I need hardly say, is massive weight at a very early age, with a greater natural aptitude to put meat on the breast and get fat, or rather plump, than any other breed possesses. These are very valuable qualities, which make the English Dorking for certain purposes the fowl of all others; but in other circumstances it does not do so well, and as an egg-producer almost invariably fails.

For a good, useful, family fowl, where chickens are needed as well as eggs for the family table, no breed will beat the Brahma. Take it all round, it is a grand breed. The chicks are neither sick nor sorry; there are plenty of them, and plenty of eggs too; and they are ready to kill at three or four months old, really fine table birds. I grow fonder of them every year. In economic merit both kinds were originally equal, but through the closer selection of the Dark variety for points of plumage alone, the Light is now in my judgment the better as a rule either for eggs or for the table, having been less deteriorated for economic purposes by this method of selection. The eggs of both the Asiatic breeds, I may add, are infinitely beyond others in a flavour at once rich and delicate, so that anyone used to Brahma eggs finds those laid by a Spanish fowl positively insipid. As a rule I should far prefer the Brahma to the Cochin, but there are still circumstances in which the latter is preferable. These are chiefly such as require the raising of the largest number of chickens in the smallest space. A pen of adult Cochins can be kept in a smaller space than probably any other except Polish, if only cleanliness and abundant green meat be provided. I have known birds kept in perfect health in a run only 5 feet by 12; so that if, besides this, a small open yard for chickens can be provided, our Cochin will "show up" well as a meat-producer for home use. They must be rigorously kept with ravenous appetites, or if so penned-up they will get overfat; but this secured, they are most satisfactory fowls, and the very ideal of pet poultry—so calm, so stately, so happy and good-tempered they are. The chickens, like Brahmas, are hardy, and fit to kill about the same time. The difference may be said to be, that the Cochin sits more frequently and can be kept in smaller space, both which point it out as the breed in cases where a good number of chickens are wished for family consumption from a very small pen of adult fowls.

But there is still another class of poultry-keepers, who have a fair run, can keep a fair number, and can rear a moderate number of chickens, such as a Dorking will hatch, but who wish

chiefly for eggs and hardy constitution. There is a breed which will just suit them in the American Dominions, which is what we call a "Cuckoo" fowl. Hardy as any, it only sits usually once in a season, and lays abundantly; while the carcase is excellent both in proportions and quality, notwithstanding its yellow legs. It is in fact a kind of medium-sized hardy Dorking, but a far better layer, and I have no hesitation in saying is a most valuable breed. It has lately been much lost sight of even in America, and good truly-bred specimens are scarce, so that some recently imported birds. I have seen showed by their progeny strong traces of recent cross-breeding; but even these specimens had proved themselves the most profitable of any fowls in the possession of the gentleman to whom they belonged, and he was loud in their praises. I doubt if this will ever be much of a "fancy" fowl, its homespun suit is too plain; but for good general usefulness, on a farm or round the house, none will beat it. Of this I am sure, and I hope to see it much commoner in England as a useful fowl, acceptable to a very large class of the community.

I do not wish any of my remarks to be taken absolutely. I have already said that there are strains of birds both better and worse than the average, and some breeds apparently suitable sometimes seem as if they would not thrive in certain localities. But on the average I think the conclusions I have thus sketched will be found sound ones, from an economic point of view; and the "fancy" view I have not been considering. If a man "goes in" as a fancier, he had far better take the fowl to which his fancy inclines him, or he will have no "heart" in the pursuit; but if he is seeking only profit by his fowls in eggs or meat, I think, according to the circumstances, those I have named will be found, as a general rule, the best breeds.—L. WRIGHT.

LIGHT BRAHMAS.

MAY I remind committees of the many shows now in formation of the great claims of the Light Brahmas to separate classes? It is all very well for our eloquent advocates of the Dark variety to say what can and should be done to improve the Light Brahma, but in common with many of our principal breeders, I am more than ever convinced of the superiority in size of the Darks, as I see them actually running away in their growth from their more beautiful brethren. It is most disheartening to see so constantly the sham competitions between the two varieties, and the absurdity of the chance of winning where one class only is provided.

I would also suggest that committees in their catalogues should imitate Bristol by placing the words "not sent" opposite the entry of an empty pen. I have lately made many entries and have failed to send the birds, and I must say that wrong impressions are often conveyed to exhibitors who are not present at the show to see for themselves.—JAMES LONG.

HASLINGDEN POULTRY SHOW.

THE eighth annual Show of the Haslingden Agricultural Society took place on Thursday last, July 18th, and for once, and once only we believe since the formation of the Society, they were favoured by fine weather, the day being one in every way desirable, and as a result the show field was crowded with visitors. The exhibition of poultry for the season of the year was a very good one, some of the best specimens in the country having been sent for competition.

In *Buff Cochins*, adults, there was a fair entry, the first prize going to a very fine pair, but getting rather too old. In chickens the first-prize pair were very fine indeed, and splendidly grown. Any other variety of Cochins, first good Partridge, and second, capital White. In chickens, both prizes went to good Partridge, the first fine well-grown birds, the second not so large, but the pullet excellent in all points. The adult *Brahmas* were very good and in capital trim for the time of year; the prize birds were, however, well to the front. The chicken classes were good, the first-prize being very promising. Adult *Dorkings* were a fair class, but, as might be expected, were getting out of feather: first, good Dark Greys single-combed, second rose-combed. In chickens the prizes went to large well-developed specimens of the Dark Grey variety. *French* fowls were a small entry, containing nothing particular except the first-prize pen, the others sadly out of feather. *Spanish* adults were a capital class, all well shown, the first prize went to a neat pen of birds with a good quality of face, the second-prize pen had large but somewhat heavier and coarser faces. In chickens the first-prize was very good, especially the pullet; it is wonderful how they can be matured in the time. Several other pens contained good specimens, but generally indifferently matched. *Game* were few but very choice, a beautiful Pile in single cocks taking first over, as the catalogue stated, the winner of the cup at Birmingham. In the class for cock and hen, Piles were again first, Brown Reds second. *Hamburgs*, as might be expected from the locality, were capital classes, and the competition in some cases very keen. In adult Golden-pencilled the first pen was clearly ahead of the rest, and

the same may be said in chickens. In Silver-pencilled two capital pens were respectively first and second, the latter losing by the cock having a tail much too white, for white, except in the edging or lacing of the sickles and side feathers, is a great fault. In chickens the first and second were very good, and nearly in full feather. In adult Gold-spangled the competition was almost confined to the two pens placed, it being very difficult to say which was best. Of chickens, strange to say, there were no entries. Black Hamburgs were excellent; this breed appears to be still improving. In any other variety, *Polands* of great merit were first and second. There were a few good Game Bantams, but several pens were out of condition, and were consequently passed over. Any other variety of Bantams, Gold-laced first, Blacks second.

Ducks and Geese were small classes, but contained good birds. The Show of *Pigeons* was very good, with an excellent classification, all the varieties being well represented, as will be seen by reference to the following prize list.

COCHIN-CHINA.—*Buff or Cinnamon*.—1 and *hc*, W. A. Taylor, Manchester. 2, H. Lacy, Hebden Bridge. *Chickens*.—1, C. Sidgwick, Ryddlesden Hall, Keighley. 2 and *c*, W. A. Taylor.

COCHIN-CHINA.—*Any other Variety*.—1, C. W. Brierley. 2, J. Raitton, Fallowfield, Manchester (White). *Chickens*.—1, C. Sidgwick, Keighley. 2, W. A. Taylor.

BRIDMAS.—1 and 2, H. Lacy. *hc*, T. F. Ansell, Cowley Mount, St. Helens (2). *Chickens*.—1 and 2, W. A. Taylor. *hc*, J. H. Pickles, Birkdale, Southport.

DORKINGS.—1 and 2, E. Leech. *hc*, J. White, Warlaby, Northallerton; J. Stott, Healey, near Rochdale. *Chickens*.—1, W. Harvey, Sheffield. 2, D. Gellatly, Temple Hall, Meigle. *hc*, E. Leech, Rochdale.

FRENCH FOWL.—1, H. Beldon. 2, G. W. Hibbert, Godley, Manchester. *hc*, H. F. East, Swadlow.

SPANISH.—*Black*.—1, J. Leeming, Broughton, Preston. 1, H. Beldon. *hc*, C. W. Brierley; J. Powell, Bradford. *Chickens*.—2, Burch & Boulter, Sheffield. *hc*, E. Brown, Sheffield.

GAME.—1 and 2, C. W. Brierley. *Cock*.—1 and *hc*, C. W. Brierley. 2, G. F. Ward, Wrenbury. *Within Six miles of Haslingden*.—1 and 2, Morris & Wood, Accrington.

HAMBURGERS.—*Golden-pencilled*.—1, H. Beldon. 2, J. Wrigley, Middleton. *hc*, H. Pickles, Earby, Skipton; S. Smith, Northworth, Halifax. *Chickens*.—1, E. Clayton, Moreton Banks, Keighley. 2, H. Pickles. *hc*, T. Wrigley, jun.

HAMBURGERS.—*Silver-pencilled*.—1, H. Beldon. 2, H. Pickles. *hc*, L. H. Ricketts, Banwell; H. & A. Gill, Crawshawbooth. *Chickens*.—1, H. Smith. 2, E. Clayton. *hc*, H. Beldon.

HAMBURGERS.—*Golden-spangled*.—1, G. & J. Duckworth, Church. 2, H. Beldon. *hc*, H. Pickles.

HAMBURGERS.—*Silver-spangled*.—1, H. Beldon. 2, Ashton & Booth, Broadbottom, Mottram. *hc*, G. & J. Duckworth. *Chickens*.—1, H. Beldon. 2, J. Fielding, Newchurch, Manchester. *hc*, T. Fawcett, Baildon.

HAMBURGERS.—*Black*.—1, J. Smith, Gilstead, Bingley. 2, C. Sidgwick. *hc*, H. Hoyle, Lumb, Newchurch; W. F. Addie, Fulwood, Preston. *Chickens*.—1, C. Sidgwick. 2, J. Smith. *hc*, J. Sharp, Gassfield.

ANY OTHER VARIETY.—1 and 2, H. Beldon. *hc*, J. Watts (Sultans). *SELLING CRABS*.—1, J. Powell, Bradford (Black Spanish). 2, W. Harvey, Sheffield. *hc*, T. Wakefield (Silver *Polands*).

GAME BANTAMS.—1, W. F. Addie. 2, T. Sharples. *Cock*.—1, W. Adams, St. Clements, Ipswich. 2, W. F. Addie. *hc*, T. Sharples; G. Hall, Kendal. *Cock* (Within two miles of Haslingden). 1 and 2, P. E. Furness.

BANTAMS.—*Any other Variety*.—1, E. Walton, Horncliffe, Edenfield (Sebrights). 2, R. H. Ashton, Mottram, Manchester (Black). *hc*, W. Harvey.

TURKEYS.—1, E. Leech, Rochdale. *Geese*.—1, E. Leech. 2, J. Houlker, Blackburn.

DUCKS.—*Aylesbury*.—1, E. Leech. 2, J. Hedges, Aylesbury. *Rouen*.—1, J. Scotson, Little Byrom. 2, E. Leech. *hc*, T. Wakefield, Golbourne. *Any other Variety*.—1, H. B. Smith, Ambleside. 2, W. Binns, Pudsey. *hc*, W. Binns; C. W. Brierley, Middleton; J. Watts, King's Heath, Birmingham.

PIGEONS.—*Carrion*.—1, G. T. Taylor, Huddersfield. 2, E. Horner, Harewood, Leeds. *Hen*.—1 and 2, E. Horner. *hc*, G. T. Taylor.

PIGEONS.—*Car*.—1, E. Horner. 2, J. Hawley. *hc*, E. Horner; J. Hawley. *Hen*.—1 and 2, E. Horner. *hc*, J. Hawley.

TUMBLERS.—1, E. Horner. 2, J. Hawley. *hc*, W. Harvey.

BARBS.—1, H. Yardley, Birmingham. 2, J. Fielding, Rochdale. *hc*, W. Harvey.

OWLS.—*English*.—1, A. Magnall, Lower Broughton. 2, A. Ashton, Middleton. *hc*, J. Wilkinson, Haslingden. *Foreign*.—1 and *hc*, G. T. Taylor. 2, E. Horner.

FAVORITES.—1, E. Horner. 2, H. Yardley. *hc*, J. F. Loversidge, Newark.

TURBOTS.—1, H. G. Poole, Bradford. 2, E. Horner. *hc*, A. Magnall.

DRAGONS.—1, F. Graham, Birkenhead. 2, E. Horner.

TRUMPETERS.—1, J. Hawley. 2, W. Harvey.

JACOBS.—1 and 2, J. Thompson, Bingley. *hc*, E. Horner.

ANTWERPS.—1, H. Yardley. 2, E. Horner. *hc*, R. Brierley, Fishpool, Bury.

ANY OTHER VARIETY.—1, J. Thompson. 2, E. Horner. *hc*, S. Durham, Littleborough; J. Thompson. *Local*.—1 and 2, W. Kemp, Haslingden. *hc*, W. E. Riley, Haslingden. (*Sale*).—1, J. Hawley. 2, T. Oddie, Brierfield (Blue Owl).

RABBITS.—*Lop-eared*.—1, T. C. & H. Lord, Huddersfield. 2, A. H. Easton, Hull. *Doe*.—1, T. C. & H. Lord. 2, H. Cawood, Thorne. *hc*, A. H. Easton.

Angora.—1, J. Baron, jun., Castlemeare, Rochdale. 2, S. G. Hudson, Hull. *hc*, J. Baron, jun. 2, S. B. Hall, Bradford. 2, L. Rawstron, Haslingden. *hc*, J. Irving, Blackburn.

Silver-Grey.—1, S. G. Hudson. 2, J. Irving. *hc*, S. G. Hudson; J. Irving.

Any other Variety.—1, J. Irving (Leopards). 2 and *hc*, S. G. Hudson (Grey and Yellow Dutch).

Any other Variety.—*For Sale*.—1 and 2, J. Baron, jun. (White Angora and Himalayan). *hc*, H. Cawood.

JUDGES.—*Poultry and Pigeons*: Mr. R. Teebay, Fulwood, Preston, and Mr. T. J. Charlton, Bradford. *Rabbits*: Mr. J. Boyle, jun., Blackburn.

TUMBLING PIGEONS.

As my last communication on the subject of Air Tumblers was in the Editors' hands before the Journal of June 18th was published, containing the letters of "OLD BOB RIDLEY" and "WILTSHIRE RECTOR," I shall in the present letter be under the necessity of digressing from my original plan, in order to reply to one or two of the statements contained in them.

The letter by "OLD BOB RIDLEY" is written ostensibly for the purpose of enabling your readers to appreciate rightly the value

of the evidence afforded by Ground Tumblers in arriving at a knowledge of whether tumbling is voluntary or involuntary. After carefully perusing his letter, however, it appears to me that the real object is to depreciate the value of Ground Tumblers; and as this is a matter which would have met with a perfectly sufficient reply in the course of my subsequent letters, according to the plan which I had sketched out, I should not have answered him now, but allowed it to have come up naturally, but for the insinuation, somewhat broadly stated, and which runs through the whole letter, that ground tumbling is mainly due to drilling and trickery. This assertion I most unhesitatingly deny as far as it relates to the birds of which I have been writing. Whether the tricks mentioned may have the effect of making an Air Tumbler into a House Tumbler, or an indifferent House Tumbler into a first-class one, I cannot say, never having tried them, although I have certainly not heard of them for the first time in your correspondent's letter.

So long as my young Tumblers can do their "balancing far away from the false balances of this naughty world," they get no treatment differing in any respect from what has been described dozens of times in this Journal as absolutely necessary to make Tumblers take flights of some duration. When those of them which ultimately develop into "first-class incapables" have reached a stage rendering it unsafe to turn them out, they are turned into a coop 30 feet long by 20 broad, well lighted in every part, in which they have entire liberty. They have always abundance of food at their command night and day, and yet the best of them will tumble at any time when wanted just in the loft where they are kept; in fact, it is only after they become House Tumblers that trickery (generally called by a milder name) can be dispensed with, and previous to that time all the trickery I have ever tried is to get them to fly sufficiently to develop the tumbling.

I think I have now said enough to enable your readers to judge which of the two classes—the House or the Air Tumbler—does the "balancing" in the more honest manner. Even although in the case of the House Tumbler it be done in this "naughty world," it is no more a "false balance" than when done by his brother far away from all dishonesty and fraud.

With "WILTSHIRE RECTOR's" letter I have little fault to find, unless that it is much too flattering to myself. If he differs with me in taste to some extent, there is one feeling which we share in common, and it is a feeling of regret caused by the fact that with by far the greater number of Tumblers there is no aerial performance; and but for this fact, and for the fact that there are a number of influences at work likely to increase the evil, unless the lovers of performing birds bestir themselves, "SCOTCH THISTLE" would not now have been contributing to this Journal. I, however, see no reason why a better state of things may not be brought about, and it is with this aim in view that this series of papers has been undertaken, one of the last of which I shall devote to an explanation of what seems to me to be the only practical method of accomplishing the desired end.

I shall now touch on one or two points mentioned in the course of his letter. In the first place he compares the House Tumbler with the "Lowtan" of India. Of the latter bird very little seems to be known, and I am very doubtful if it be a Tumbler at all. No doubt it is reported that a breed exists which will roll on the ground much in the same way as House Tumblers tumble, yet, so far as I know, there is no published account of any European having ever seen them, all the birds exhibited having first had to undergo a preparation by a certain shaking of their head, after which they roll on the ground as if in a fit. A number of years ago I happened to know an individual who had seen the "Lowtan" perform, and thinking from his account that probably any Pigeon might be made to roll after being operated on in the way described, I resolved to make the experiment. I accordingly caught one of my own birds, and commenced to follow instructions as nearly as possible. The bird soon began to show symptoms of sickness, and afterwards began to vomit; and at this stage, not feeling inclined to carry the cruelty farther, even in the interest of science, I stopped, and have never tried it again. Perhaps some one else may feel inclined to carry the experiment to a more successful issue, and should there prove to be any truth in my surmise, it will show conclusively what I really believe to be the case, that there is very little in common between the two breeds.

Again, "WILTSHIRE RECTOR" says, "I think no sick bird tumbles, nor a hen with egg." Of sick birds I can say almost nothing, as such a thing amongst House Tumblers is of most uncommon occurrence, and amongst the very few instances which I have had, I do not think there was any case where the fact could have been very distinctly made out. In the case of Flying Tumblers I do not see that it will be very easy to make sure about it at all, as they will certainly not incline to take flights if sick, and even if compelled to fly a short distance, will only do so at a slow pace, and in such a way that they would probably not tumble, even if well. A House Tumbler hen

with egg will certainly tumble, as since "WILTSHIRE RECTOR'S" letter appeared I have tried three different hens, and have never seen any of them do much better than an hour or two before laying. I have not tried any of my flying hens so close on the time of laying, but can say certainly that even birds whose performances in the air are nothing wonderful, do tumble while the egg is upon them.—SCOTCH THISTLE.

WIRRAL AGRICULTURAL SOCIETY'S POULTRY SHOW.—In the schedule of this Society's Show, to be held at Birkenhead on the 21st of next month, there is a considerable improvement in the prizes offered for Pigeons. For example, last year the Carriers and Pouters were shown in pairs, this year they are shown singly, and there is a class for Antwerps. There are three cups in the place of the one hitherto offered, also two cups in the poultry classes.

OUR LETTER BOX.

LIGHT BRAHMAS.—"Allow me to correct an advertisement in your issue of July 11th. Mrs. Secombe, Totnes, Devon, advertises three Brahma cocks, &c., and says, 'They have twice and only times shown beaten the celebrated Young Sampson.' This is grossly incorrect, as Mrs. Secombe has never had the honour or pleasure of beating this bird. Most of Mrs. Secombe's, as advertised, are birds of 1871, whereas my bird has not been exhibited for nearly twelve months. We rarely see advertisements, even when facts, in which notoriety is sought at the expense of another fancier, and I think the system is, to say the least, reprehensible.—JAMES LONG."

COCK SEEMINGLY INATTENTIVE (S. B.).—We do not believe in the disease of which you accuse your Brahma. He is up earlier in the morning than you are. Put him to roost separated from the hens. Let him out yourself between four and five, and immediately afterwards let out the hens. You will, we believe, soon be satisfied. Later in the day you cannot depend on the same proof.

HATCHING EGGS BY STEAM (W. H. O.).—We know no place where information can be obtained about hatching by steam, but particulars of incubators can be had at Daily's, 113, Mount Street, London.

POWLS FOR CONFINED SPACE—PREVENTING RATS' DEPREDATIONS (C. A. J.).—Hamburgs are not so hardy in confinement as Brahmas, nor are their eggs so large. Rats do not take many eggs. They are difficult to get away unless they can roll them into holes. Prevent this by filling-up all the holes with loose, large, gravel stones, and where there are runs put Brailford's traps. Rats do not take many chickens while these are with hens and the latter are under rips. A hen will make a good fight in defence of her chickens. You can put the laying-boxes 2 feet from the ground if you will. The reason why we thought Brahmas the most suitable is, that they are among the hardiest of fowls, and are good layers. It requires hardy fowls to live in confinement, and to preserve the healthy appearance and habits that make it a pleasure to have them.

BRAHMA PULLET CROP-BOUND (M. H.).—Opening the crop of the fowl is a capital operation, and should only be resorted to when all remedies and expedients have failed. We have little doubt the poor patient died of the operation. You should have withheld food and drink, save some warm water at times. You would have found the food in the crop diminish, and if it had not, you should have held her up by the legs until it had wholly or partly emptied itself. It is only justifiable to open a crop when some hard substance has been swallowed, or when a ball has been formed that cannot be got rid of. It is then a matter for serious consideration. We do not like your feeding, you take much trouble for nothing. We wonder they are not all crop-bound. Give them ground oats slaked with water morning and evening; whole corn, barley, or maize at midday. Discontinue all dough, stir-about, boiled rice, and Indian meal. You make them ill by too much painstaking.

CUCKOO FOWLS.—Can you through your Journal obtain the names of one or two persons who keep Cuckoo fowls, Scotch Greys some call them?—E. F.

HYDE POULTRY SHOW.—Mr. G. W. Hibbert informs us that the exhibition to be held at Hyde on September 9th and 10th, in connection with the East Cheshire Agricultural Society, has nothing to do with the annual show at the same place, which will be carried out about November with an increased number and amount of prizes. We are also glad to find that the two shows are not in opposition.

WASHING ROUEN DUCKS FOR EXHIBITION (W. C. A.).—You may wash their feet and bills artificially if you will, but if the opportunity of washing in clean water be afforded them, they will wash their plumage better than you can.

EGGS NOT HATCHED (W. E.).—You will be the best judge of the conditions on which you bought the eggs. Some sellers decline all responsibility, others offer to replace all bad eggs. It has always appeared to us difficult for a man to guarantee that which has passed from under his control. We repeat, however, you can only complain if the person who sold you the eggs has broken his contract.

BANTAMS SCURFY AND LOSING FEATHERS (J. W. H. X.).—You do not state what food you give, and it is probably too heating. The artificial style of feeding induces many diseases. Give your Bantams lettuces that have gone to seed, supply them with dust if they have it not, and mix some black sulphur with it. Rub the naked places with compound sulphur ointment, and feed as naturally as you can on ground oats, barley, and barleymeal.

DUCK APPARENTLY PARALYSED (E.).—Ducks are subject to cramp, and probably yours is suffering from it. We know no cure for it. Even in adults it is a fatal disorder. Some waters always produce it; and we should think the icy cold fluid in a basin, acting on the system while the bird was trying to get out during some hours, would be too much for a duckling, and leave disease from which it will never recover.

POUTERS AT THE BIRMINGHAM SUMMER SHOW.—In your correspondent's report of the Pigeons at the late Birmingham Show, he states that my Blue Pouter hen which won the cup has a stiff wing, is a bad blue, and blind of an eye. This I beg to contradict, the hen being a good flyer, a good sound blue, and perfect in eyesight.—J. HAWLEY, *Girlington, Bradford.*

CARRIER GOING LIGHT (C. H. C.).—Give ood liver oil night and morning, one teaspoonful each time, or in capsules.

YOUNG RABBITS DYING (Hampton Wick).—The Rabbits are probably suffering from an attack by a fluke, which attaches itself to the liver and causes

it to decay. This parasite is probably received into the stomach upon the green food eaten. Keep them warm and from the ground, administer a grain of calomel in two doses at intervals of twelve hours, and we think they will be benefited. Rabbits of the age named are at a very precarious stage, for they are then passing through a moult, and they require extra care for a few weeks.

RABBITS (An Old Subscriber).—If you write to Mr. Rayson, Ivy Cottage, Didsbury, perhaps he will be able to supply your wants.

DOG'S EAR DISEASED (P. Graham).—The disease, from your description, is in such a state that we should not like to prescribe without seeing it; but you should lose no time in consulting a veterinary surgeon.

METEOROLOGICAL OBSERVATIONS, CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	A.M.				IN THE DAY.						Rain.
1872.	Barom- eter at 990 and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Tem- perature.		Radiation Temperature			
July		Dry.	Wet.			Max.	Min.	In sun.	On grass		
		Inches.	deg.			deg.	deg.	deg.	deg.	deg.	
We. 17	29.887	63.7	59.5	N.W.	62.0	68.1	51.8	91.6	48.1	0.036	
Th. 18	29.949	60.0	56.2	W.	60.9	74.6	49.2	120.0	45.2	—	
Fri. 19	30.072	67.2	60.4	W.	61.8	79.2	53.8	122.8	51.9	—	
Sat. 20	30.112	69.0	61.8	S.W.	62.6	83.9	55.2	125.9	52.8	—	
Sun. 21	30.068	77.5	64.2	S.	64.4	89.0	57.5	132.9	55.4	—	
Mo. 22	29.843	79.5	70.2	S.E.	65.9	87.4	59.9	127.4	56.8	0.290	
Tu. 23	29.843	70.0	65.5	N.	64.9	85.3	59.3	123.0	57.2	0.890	
Means	29.968	69.6	62.5		63.2	81.0	55.2	121.2	52.5	1.216	

REMARKS.

17th.—A rather dull day, a little rain about noon, but bright in early evening.
18th.—Dull morning, but fine before noon, slight rain about 5 P.M., and for a time very dark in the evening, fine afterwards.

19th.—Fair, but not very bright in the morning, fine all the day from noon.

20th.—A most brilliant day throughout, exceedingly clear, distant objects seen distinctly.

21st.—Splendid summer day, very hot, but air so dry that it did not seem oppressive.

22nd.—Very fine morning, but soon clouded over, and violent thunderstorm between 11 A.M. and 1 P.M., fair afternoon and evening.

23rd.—Fine early morning, thunder at 9.15 A.M., and at intervals all day, but between 6 P.M. and 7 P.M. the most violent storm of thunder, lightning, rain, and hail ever remembered; rather better after, but continuing more or less till midnight. Hailstones unusually large; one, picked up eleven minutes after its fall, measured upwards of three-quarters of an inch by more than half an inch, and was nearly half an inch thick. As they fell during a dead calm there is little damage to glass in this neighbourhood. Rain fell at a rate exceeding 6 inches per hour, 0.10 inches falling in fifty seconds, and a second 0.10 inches in the following minute. A quarter of an inch fell in two and a half minutes.

Temperature very much above the average, with thunder almost daily, and an unusually severe thunderstorm on Tuesday afternoon and evening.—G. J. SYMONS.

COVENT GARDEN MARKET.—JULY 24.

TRADE is falling off now, and prices are receding, but not to materially influence them. Bush fruit continues in active demand in consequence of the short supply, and is making good prices.

FRUIT.

		s.	d.	s.	d.			s.	d.	s.	d.
Apples.....	½ sieve	3	0	to 6		Mulberries.....	½ lb.	0	0	to 0	0
Apricots.....	doz.	2	0	3	0	Nectarines.....	doz.	6	0	10	0
Cherries.....	per lb.	0	6	1		Oranges.....	½ 100	8	0	12	0
Chestnuts.....	bushel	0	0	0		Peaches.....	doz.	8	0	18	0
Currants.....	½ sieve	5	0	6		Pears, kitchen.....	doz.	0	0	0	0
Black.....	doz.	5	0	6		dessert.....	doz.	0	0	0	0
Figs.....	doz.	4	0	8	0	Pine Apples.....	lb.	3	0	6	0
Filberts.....	lb.	0	0	0		Plums.....	½ sieve	0	0	0	0
Cobs.....	lb.	0	6	1		Quinces.....	doz.	0	0	0	0
Gooseberries.....	quart	0	6	0		Raspberries.....	lb.	0	4	0	6
Grapes, bothouse.....	lb.	2	0	5		Strawberries.....	½ lb.	1	0	2	0
Lemons.....	½ 100	8	0	14		Walnuts.....	bushel	10	0	25	0
Melons.....	each	2	0	5		ditto.....	½ 100	1	0	2	0

VEGETABLES.

		s.	d.	s.	d.		s.	d.	s.	d.	
Artichokes.....	doz.	4	0	to 6	0	Mushrooms.....	pottle	3	0	to 5	0
Asparagus.....	½ 100.	0	0	0	0	Mustard & Cress.....	punnet	0	2	0	0
Beans, Kidney.....	per 100	1	0	0	0	Onions.....	bunch	0	4	0	0
Broad.....	bushel	3	0	0	0	pickling.....	quart	0	6	0	0
Beet, Red.....	doz.	1	0	9	0	Parsley per doz. bunches		3	0	4	0
Broccoli.....	bundle	0	9	1	6	Parsnips.....	doz.	0	9	1	0
Cabbage.....	doz.	1	0	1	6	Peas.....	quart	1	0	1	6
Capsicums.....	½ 100	0	0	0	0	Potatoes.....	bushel	5	0	15	0
Carrots.....	bunch	0	6	0	0	Kidney.....	doz.	5	0	15	0
Cauliflower.....	doz.	2	0	4	0	New.....	½ lb.	0	1	0	0
Celery.....	bundle	1	6	3	0	Radishes.....	doz. bunches	0	6	1	0
Coleworts.....	doz. bunches	2	0	9	0	Rhubarb.....	undle	0	8	0	0
Cucumbers.....	each	0	6	1	0	Salsify.....	½ bundle	0	9	1	0
Endive.....	doz.	2	0	0	0	Savoy.....	doz.	0	9	1	0
Fennel.....	bunch	0	3	0	0	Scorzonera.....	½ bundle	0	9	1	6
Garlic.....	lb.	0	8	0	0	Sea-kale.....	basket	0	0	0	0
Herbs.....	bunch	0	3	0	0	Shallots.....	lb.	0	4	0	0
Horseradish.....	bundle	5	0	7	0	Spinach.....	bushel	3	0	4	9
Leeks.....	bunch	0	0	2	0	Tomatoes.....	doz.	2	0	4	0
Lettuce.....	doz.	0	9	1	0	Turnips.....	bunch	0	8	0	6
						Vegetable Marrows.....	doz.	3	0	4	0

POULTRY MARKET.—JULY 24.

PRICES are falling, and but for the hot weather, the change would be greater.

WEEKLY CALENDAR.

Day of Month.	Day of Week.	AUGUST 1—7, 1872.	Average Temperature near London.			Rain in 43 years.	Sun Rises	Sun Sets.	Moon Rises.	Moon sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m.	h.	m.	h.	m.	h.	Days.
1	Th	LAMMAS DAY.	75.6	50.4	63.0	19	26	43	9	27	27	6	1
2	F	Devon and Exeter Horticultural Show.	75.3	50.9	63.1	20	27	43	57	15	7	5	57
3	S		74.9	50.6	62.8	19	28	42	56	49	7	5	53
4	SUN	10 SUNDAY AFTER TRINITY.	75.9	50.6	62.8	17	30	40	1	18	8	5	47
5	M	General Holiday.	74.5	50.9	62.7	19	32	39	10	5	39	5	41
6	Tu		73.2	50.8	62.0	21	33	38	20	6	56	5	35
7	W	Royal Horticultural Society, Fruit, Floral, and General Meeting.	74.6	50.9	62.7	16	35	37	29	7	11	5	28

From observations taken near London during forty-three years, the average day temperature of the week is 74.9°; and its night temperature 50.7°. The greatest heat was 92°, on the 2nd, 1856; and the lowest cold 31°, on the 2nd, 1864. The greatest fall of rain was 1.23 inch.

HYACINTH CULTURE.

NOW is the time to arrange for purchasing the supply of what are called Dutch roots to make a display next season.

The Hyacinth most deservedly heads the list. This flower has long been a favourite with all classes, and the price of the bulbs places it within the reach of all. The cottager and others of limited means can have their bulbs at a few shillings a-dozen, while those with more ample means can encourage the introduction of new sorts by purchasing them at a rate sufficiently high to recoup the growers for their trouble.

The Hyacinth has been brought to such a state of perfection that it is very difficult to make any improvement on the old varieties, but that there is an improvement taking place there can be no question. In single blue, for instance, King of the Blues is well in advance of any other sort of the same colour. La Grandesse is the best white, Vuurbaak is the best bright red, and the recent double variety Koh-i-Noor is the best double variety in cultivation. I have also observed amongst some of the more recent candidates for public favour that new colours are prevalent. The best and most distinct last season was Excelsior, a flower of great promise; it has a large spike and large well-shaped bells of a reddish-cream colour, with a rose stripe down the centre of each segment. Another distinct flower is Lord Mayo; it was, as exhibited, rather deficient in spike, but the colour is very distinct—violet plum, with a white eye, and it may be shown better. The first named was exhibited by Messrs. Veitch, and the other by Mr. W. Paul.

We cannot expect much improvement in the spikes of the single varieties, but we require new colours. In the double varieties we want the bells to be like those of Lord Wellington and the spike like that of Koh-i-Noor. Princess Louise, a double red variety introduced by Mr. W. Paul last year, is a step in the right direction, and it may be the parent of some improved varieties.

So much has been written about the Hyacinth by cultivators of large experience that it may be considered presumption on my part to refer to the subject at all. However, I can state what I do know, and if anything is left out of importance others can take it up.

Many gardeners and amateur growers do not trouble themselves about the names of Hyacinths, they require a certain number of bulbs, and they order them from the seedsmen at so much per dozen; no doubt the seedsmen will send good selections, and such as will give satisfaction to their customers. The amateur who is especially interested in his flowers will have his own special favourites. The grower for exhibition will soon ascertain the names of those adapted for his purpose and order accordingly. Persons intending to grow for exhibition will require to purchase bulbs of the very best quality, they must pay the highest price as the only means to secure this result.

When the bulbs are sent home they should be left in the bags and placed in a cool airy position until it is time to pot them. I find the last week in October, or the first week in November a good time. The compost should be previously prepared. About June is a good time to attend to this. I select good turfy loam in which clay does not predominate; leaf mould, cow manure, and river sand are added to it in equal proportions. The whole is well incorporated, and is then laid-up for use. I have potted the bulbs at many different periods, from the 1st of September until the end of November, and for the purpose of exhibition I think the end of October is the best time. The flowering period may be retarded if the bulbs are not potted until December, but if they are kept out of the ground so late they deteriorate in consequence. In potting, place one large crock over the hole in the pot, some fibrous turf and rough manure over that, and then fill-in with the usual compost, which should be pressed-in rather firmly with the hands. The bulb should be in the centre of the pot, and the crown just visible above the surface of the soil. The potting material should be moist when it is used, as it is not desirable to water immediately after potting. The pots should be placed out of doors on a thick bed of ashes, which will prevent the worms from getting in through the holes in the bottoms of the pots. The pots should then be covered with cocoanut fibre refuse, spent tan, leaf mould, or any similar light material that can be obtained. There they should remain without any protection from wet until early in January, when they should be removed to a cold pit, and placed very near the glass. I say a cold pit, but it is better to have the structure furnished with the means of heating, as severe frost may set in, and the young growth be checked. Of course, if the pit were not heated the pots would require to be plunged. The exhibitions are generally held from the middle to the end of March, and to obtain Hyacinths in perfection at this time but little forcing is required. At the same time I believe the spikes finish off more perfectly if a little artificial heat can be applied; but one rule must always be strictly observed, and that is, keep the plants as close to the glass as possible, and admit air to them freely. Shutting up the house closely at night and maintaining a high temperature, is sure to draw the foliage and spikes up weakly. They do not require much attention, but what little they do require should be given at the right time.

Although the Hyacinth will grow and flower in glasses of pure water, when it is grown in pots large and frequent supplies are not needed; indeed one oftener sees it over rather than under dosed with water. If little or no artificial heat is applied, water will be required only about twice a-week until the time when the colour of the flowers can be discerned, when the plants will require more of it, but no rule for watering this or any other plant can be laid down. There is always less danger of injuring them by an over-supply of water when they are in a high temperature.

When the spikes are sufficiently advanced they should be tied to neat sticks, and if this is not promptly attended

to the spikes will sometimes fall over and snap-off close to the surface. Exhibitors tie their spikes to neat wire supports made in this way:—A straight piece of wire is bent at 3 or 4 inches from the end; 2 inches further up it is again bent, so that the wire support can be brought close to the stalk without injuring the bulb. Trained in this way, and fastened with neat ties, the supports are scarcely visible. Exhibitors should also note that no dressing is allowed—at least, such as is visible to the practised eyes of the judges. The bells require to be arranged with a pointed piece of wood not so thick as an ordinary cedar pencil, and brought up so that they may stand boldly out from the spike, but no artificial tying-up of the bells is permitted. When flowers are grown for exhibition exhibitors will do their best to bring them up to the required standard of perfection, but everything artificial should be discouraged as much as possible, and flagrant instances of deception should be fully exposed.

I have carefully noted the varieties exhibited at the London shows during the last two or three years, and consider the following to be the best:—*Single Red*.—Cavaignac, Fabiola, Gigantea, Macaulay, Mrs. Beecher Stowe, Solfaterre, Von Schiller, and Vuurbaak. *Single White*.—Alba Maxima, Baroness Von Tuyl, Grandeur à Merveille, La Grandesse, L'Innocence, Mont Blanc, and Queen of the Netherlands. *Single Blue*.—Baron Von Tuyl, Charles Dickens, General Havelock, Grand Lilas, King of the Blues, Leonidas, Marie, and Mimosa. *Single Yellow*.—Anna Carolina, and Ida. *Single Lilac and Mauve*.—Czar Peter, De Candolle, Haydn, and Sir Henry Havelock. *Double Red*.—Koh-i-Noor, Lord Wellington, Noble par Mérite, and Prince of Orange. *Double White*.—La Tour d'Auvergne, and Prince of Waterloo. *Double Blue*.—Garrick, Laurens Koster, Louis Philippe, and Van Speyk.

Some of the above are new sorts and necessarily expensive, and purchasers must make out their order according to the sum at their disposal. I order a large proportion of such as Charles Dickens, Grandeur à Merveille, and Baron Von Tuyl. —J. DOUGLAS.

NOTES OF A WANDERER.—No. 1.

FROM BIRMINGHAM TO BASLE.

WHEN I plunged through the slush and mud of the Lower Grounds at Aston, and with umbrella in hand essayed to gather together my notes and tried to be jolly, like Mark Tapley, under difficult circumstances, I could not help saying to myself, "Cheer up, in a very few hours you will be in quite a different location;" and so in truth I was. On Tuesday night (June 25th), I left Birmingham, and on Thursday night was at Heidelberg. The fact was, a near relative, overborne by the work of a large parish, had become thoroughly prostrated physically and mentally, and had been ordered abroad, and I was to accompany him and see him settled in Switzerland; so it fell out that about the very last thing that I should have thought of as likely to happen this year came to pass, and I have found myself amongst the smiling valleys, on the passes and glaciers of the Alps of Switzerland and Savoy. Before leaving home I went to my desk and took out my horticultural spectacles (not rose-coloured, but a sort of neutral tint), and determined to see what I could in that time. Some people never wear spectacles, and therefore never see anything. I generally contrive to carry a few pairs; sometimes they are ecclesiastical, at other times they are art ones, and very frequently horticultural. The advantage of this is, that wherever you are there is always something to be seen and something to be noted; and although what I have seen in this tour is not very noteworthy in a horticultural light, yet such as it is it may be worth telling, if only to save others from much disappointment.

At Coblenz, where I remained for a few hours to see a young friend, I walked, as in duty bound, round the town and along the beautiful promenade made by the Empress Augusta, whose favourite residence Coblenz is. It extends along the banks of the Rhine, and commands a good view of Ehrenbreitstein. I did not notice anything remarkable in the laying-out of the ground; in fact shade seemed the great thing around it. One arrangement struck me as pretty. There was a long border of the common Periwinkle about 3 feet wide; this was kept very neatly trimmed, and panels were cut out of it at short distances, which were filled with Alternanthera, Golden Feather kept low, and other plants of a similar character. Here, as elsewhere, one is struck with the utter absence of anything like our English lawns; but after all, can it be otherwise? We have had experience in 1868 and 1870 of the kind

of summers that are pretty general on the Continent—weeks of dry burning sun without any rain, and we know in what a state our lawns were in those seasons—hardly distinguishable from the paths that surrounded them; and when the Paris Exhibition was open, the grass in the Jardin Anglais was only kept in its green state by constant waterings. In fact, the great difficulty of summer gardening on the Continent is this. We deplore our changeable climate, mourn over the dark and sombre days we sometimes have, regret how our picnics are spoiled by heavy showers; but after all, there is no climate equal to it for gardening, and I believe for real enjoyment.

At Heidelberg, my next stopping place—for I was glad enough to get out of dirty wobegone Mayence—the one place is, of course, the castle, without doubt the most interesting ruin of its kind in Germany; and the walks and shrubberies around form an agreeable promenade and place of resort for the citizens and students, the latter of whom, in all sorts of fantastic caps, which would very much astonish our University dons, are to be met with on every side. Here there was positively nothing to remark. Roses were to be seen as standards, but, like all the Roses on the Continent, far inferior to our own. There was some little attempt at a pinetum, but it was a very mild affair. The markets here seemed to be very well supplied with both fruit and vegetables, as might be supposed from its nearness to the rich valleys of the Neckar and the fertile plains of the Rhine. Strawberries were abundant but dear, at least the larger kinds, which are generally called abroad English Strawberries. The Fraise de quatre Saisons was of course, as everywhere abroad, the special fruit. Cherries were abundant, both Black Hearts and Bigarreans; the latter, however, not so fine as we found them at Lausanne, where they were as fine as ever I have seen in this, *par excellence*, the county of Cherries, Kent.

There was but one thing I regretted in my onward journey—that I had no time to stop at Carlsruhe, that I might have had an opportunity of paying a visit to Mr. Max-Leichtlin and of renewing the acquaintance I made with him at South Kensington; but the circumstances under which I was travelling prevented my doing so, although I had to remain at the station for twenty minutes. Nothing can exceed the richness and beauty of these Baden plains. The hay harvest was being got in, and a scene of brightness it was. The patient oxen drawing the waggons, the well-to-do appearance of the peasantry, and the well-ordered character of everything, betokened a prosperous land. "Small blame to them" that they should have fought so earnestly for it, or thrown in their lot with that powerful empire which has arisen in central Europe. I was, however, struck with the fact that the cottagers' gardens were not like those of our own good land, glowing with flowers, and that at the railway stations no flowers were offered for sale; in fact, there was little evidence that the Germans are a flower-loving people, and I do not think they are. Possibly to love flowers requires a certain amount of sentiment and imagination, and however estimable may be the German character, no one can accuse them of a large share of either of these qualities. Nothing could possibly be worse, too, than the table decorations at the table d'hôte both here and in Switzerland. Common flowers, clumsily arranged and jammed into ugly vases, were made to pass for table decorations; and this is the more remarkable, as in other respects the appointments of the table were in excellent taste. It was late when we arrived at Basle, and the old familiar "Trois Rois" received me once more. And how pleasant to look out from one's windows on the rushing Rhine! and how completely one can understand the one sentiment Germans own to—their love for this glorious river! I must reserve my notes of the place for next week. —D., Deal.

ONCIDIUM MACRANTHUM.

SOME of your readers may well know the freedom with which this lovely Oncid flower at Ferniehurst; still, it may be gratifying to those interested in Orchid culture to hear that this season is not an exception, but rather in advance of any previous one. In the spring of 1871 a spike bore forty-four of its noble blooms; one plant, however, has now far exceeded that number, having produced a branched spike bearing seventy-seven blooms, which, had it not been that the first or main branch was damaged in the early part of its growth, would probably have borne ninety, there being thirteen flowers on each of the two next branches. This, with two more spikes on other plants, gives a total of 115 flowers open at one time,

forming a splendid mass. I can but say to those about to commence the cultivation of cool Orchids, Obtain this *Oncidium*, for without it no good collection can be considered complete.—C. J. WHITE.

THE STRAWBERRY CROP.

THE Strawberry season here (Lincolnshire) has been exceptionally short. The blooms, except in low-lying localities, mostly escaped the frost of the 19th and 20th of May. After this, ten consecutive days of unclouded sun ending June 1st, rapidly accelerated ripening, but both colour and flavour were wanting owing to the daily heavy rains of June 2nd to 11th inclusive. Then came a roasting week, for four days, the thermometer in the shade being above 80°, and one day reaching 90°. This frizzled the early berries, and they were finished off by heavy thunderstorms and continued rains up to the end of the month. July opened with five bright days, which gave the ripening touch to the main crop. Only a small proportion of this, however, was secured, the terrific thunderstorm of the 6th, and the deluges of rain beating them and knocking off much unripe fruit. Rain continued to fall heavily for a week, and the Strawberry season was over.

Of the abundance of fruit which the plants showed, only a comparatively small quantity was secured in good condition. From June 1st to July 15th the rainfall amounted to 7½ inches. In many places upwards of 2 inches fell in twenty-four hours on the 6th, and by one gauge at Lincoln 2.60 inches of rain were registered. This same gauge during the whole of last year only gave a total of 19.12 inches, so that the relative proportion for the short period above mentioned is strikingly excessive.

But putting aside weather contingencies, the Strawberry season is too short. To lengthen it is an important desideratum. The assistance of cultivators is requested, and they can do good service by naming good free-bearing kinds specially early and specially late. The best early one I have is *Vicomtesse Héricart de Thury*. What is there earlier and better? As to a reliable late kind I have not a really good one worth naming. I—and I have no doubt many more—will be glad of practical information on this matter. On the 22nd ult. the thermometer in the shade, 4 feet from the ground, registered 91°.—J. W.

MR. DOUGLAS'S article on the Strawberry has no doubt been perused with much interest by your readers, and I have that faith in what he says about their general culture as to advise all those who need information to follow his advice to the letter. The list of sorts he gives is a first-rate one, for it embraces most of those with high flavour and general cropping merits. There is one sort that Mr. Douglas does not mention which I should like him to add to his already extensive list, and I will give him the opportunity of doing so by sending him a few runners of it, if he does not already possess the variety, in exchange for some of *La Constante*, which I should much like to grow. The variety to which I refer is called *Late Prince of Wales*; it is very different from *Ingram's Prince of Wales* in foliage, fruit, and time of ripening. The former I am gathering from now that all others are gone. It is a most wonderful cropper, the fruit medium-sized, rather long in shape, but not objectionably so, and of the colour and style of *Princess Alice Maude*. I am told that it found its way to Hatfield from the late Mr. Outhill, of Camberwell. I have not seen it mentioned in any nurserymen's or other lists that have come under my notice. It does not equal some of the sorts named by Mr. Douglas in point of flavour, but its principal recommendations are its lateness, and being a great cropper of very good flavour. I do not hesitate to recommend it. It possesses a hardy and very vigorous constitution.—THOMAS RECORD.

A NEW MISSIONARY WORK.—A few days ago some of the most sentimental brokers doing business upon the Stock Exchange made up a pool of a small amount, by subscribing 25 cents each, for the purchase of a handsome terra-cotta vase, which was placed upon the large table in the Exchange, to be filled with fresh cut flowers every morning by Mr. Alexander Stewart. The entire arrangement, in fact, was made at the instigation of Mr. Stewart, who has adopted this method of humanising the Board. It is stated that the brokers readily handed in their quarters, particularly the young ones, many of whom remarked that the flowers would remind them of the green fields of their youth, and of the days when they were

young and innocent. If the flowers upon the table are the means of giving a pleasing sentiment to a single broker, surely their mission is not in vain.—(New York Daily.)

THE ROSE SEASON—ROSE NOTES.

I SEND you my experience of Roses this season. I must premise that, as a rule, the "cut-back" Roses have been very indifferent; those I now name have been from last summer's budding. Of the more recently-introduced Roses, *Edouard Morren*, *Louis Van Houtte*, *Dupuy-Jamin*, *Marquise de Castellane*, and *Marquise de Mortemart*, *Mdlle. Eugénie Verdier*, *La Motte Sanguine*, and *Ferdinand de Lesseps*, have been all that could be wished—abundant in flower, free from blight of any kind, and I think, without exception, have proved themselves first-class Roses. *Countess of Oxford*, *Paul Néron*, *Emilie Hausburg*, and *Louisa Wood* have not come up to what they promised last year, but I shall work them again largely, as I think that this very peculiar season has not given them a fair chance.

Among the old favourites, *Baroness de Rothschild*, *La France*, *Marie Baumann* (to my mind the best *Roses* in cultivation), *Charles Lefebvre*, *Camille Bernardin*, *Monsieur* and *Madame Noman*, have been perfectly splendid—an abundance of bloom of large size and perfect shape. That splendid *Rose Alfred Colomb* has been quite out of "form;" so have the no less first-class varieties *Madame Victor Verdier*, *Duchesse de Caylus*, *Maréchal Vaillant*, *Xavier Olibo*, and *Duke of Edinburgh*, though I have seen the latter shown well in this neighbourhood. The *Rev. C. P. Peach* has mentioned two *Roses*, *Perfection de Lyon* and *Princess Christian*, and I shall be anxious to see the reply of growers to his queries. As for my own experience, I consider the first to be most useful for this reason: though never a very first-class *Rose*, I have over and over again turned to it when in want of a truss of that colour to make up a stand, and have never found it wanting; it is always in bloom, and never bad if a little care has been taken in preserving the colour. I should never like to be without a dozen young plants. As to *Princess Christian*, "*D., Deal*," in answer to a query of mine in your paper some time back, said, "Woe to him who trusts to them in a show stand," and I agree with him when it is grown in the open air, but as a pot *Rose* I know none better. I flowered it this spring in my *Rose* house, and there its size was equal to *Baroness Rothschild* grown under similar circumstances. It is in my experience the best pot *Rose* we have.

Of *Tea-scented Roses*, the best as yet have been *Maréchal Niel* (splendid this year), *Rubens*, *Souvenir d'un Ami*, *President*, *Pauline Labonté*, *Catherine Mermet*, *Climbing Devonensis*, *Souvenir d'Elise* (the best pure *Tea Rose*), *Madame Willermoz*, *Niphetos*, and *Madame Bravy*.

We have had an election of *Roses*, I should be delighted to see a poll of the *Teas* published in your *Journal*. I am convinced that it is a class of *Rose* which only requires to be more known to be thoroughly appreciated. *La Belle Lyonnaise* is very beautiful, but how tender! I have lost more of it than any *Tea Rose* I have, and that includes nearly every one in cultivation.

Ere I conclude, one word on *Cucumbers*. I see praises of *Marquise of Lorne*, *Blue Gown*, and many other giants; but are we to grow for size or quality? Do any one of the new kinds come in for use equal to the smaller and older varieties—for instance, the matchless *Rollisson's Telegraph* or the old *Lord Kenyon's Favourite*? I think not.—STIFF SOIL, Somerset.

THE practical remarks of the *Rev. C. P. Peach* tempt me to offer one or two additional notes to my brother amateurs.

In selecting *Roses*, one should never choose solely from cut flowers, but, if possible, from growing plants, which, if weakly in habit, should be at once rejected, as disappointment will ensue, however beautiful in other respects they may be. Trade catalogues are not always, in respect of growth, a true guide. Many *Roses* grow and bloom well from the bud, and never afterwards, and so it comes to pass that the term "robust" is used, when "stunted" would be the better description. Do not run after new varieties until you have thoroughly tried and well grown the older sorts. I lately saw on the wall of a village school-house a plant of *Baronne Prévoist*, some 15 feet high by as many broad, with one hundred blooms on it, each 4 to 5 inches in diameter—a grand floricultural sight, and yet with many this *Rose* has been already

cast aside. Another Rose is Charles Lefebvre. How seldom does one see it grown to perfection, even in the largest gardens, and yet it is, when properly treated, the grandest of all Roses, exciting universal admiration.

Distinctness is another point of great importance in selecting. There are so many flowers so exactly alike, that it is impossible for an ordinary rosarian to distinguish between them; only some professional captain of a hundred thousand can decide by the foliage that Madame is not Mademoiselle.

Now, a word or two on cultivation. If I am asked to name a rule which more than another tends to the production of fine blooms and healthy plants, I say the rule of thumb—that is, rubbing out with the thumb, during the earliest stages of growth, all branches crossing one another, especially those from the outside to the centre of the plant. If this is properly and regularly done hardly any pruning will be necessary, only the shortening of the branches. Again, whenever a very fine bloom, either in colour or symmetry (not size), is observed, slip off the buds immediately behind it (which can easily be done without cutting off the branch or bloom), and insert them in the best stocks. By pursuing this course for some years the colour of the flowers will be fresher and more brilliant, and the strain of the variety manifestly improved. With Tea Roses, plump ripe buds of which are generally difficult to obtain, this is an excellent plan.

In conclusion, I would recommend French nippers for pruning; those by Borel, of Paris, are the best. Hitherto there has been some trouble in obtaining them, but I am glad to find that Messrs. Weiss & Son, the eminent cutlers in the Strand, have imported some, and for something under 10s. an instrument can be obtained which hardly ever requires sharpening, will cut both old and new wood, and save much stooping—no slight recommendation to old heads and limbs.—C. M. W.

PREDATORY INSECTS OF OUR GARDENS.

In some very interesting remarks which have appeared in your Journal on "Some Predatory Insects of our Gardens," No. 32 of the series, it is stated that *Liparis chrysorrhoea* is too scarce to be troublesome. This is at the present day true, at least as far as my observation goes, but when I commenced entomology, some thirty years ago, it was very common in my native place (Lewes). I have seen hedges defoliated by the larvæ, and I have no doubt that Plum trees would suffer very much by its ravages if the insect ever became common again, which is quite possible. The larvæ is hairy, and I do not doubt that, in common with most hairy larvæ, it is not eaten by birds except cuckoos.

There is a further statement in the same communication which calls for observation—viz., that the larvæ of *Episema ceruleocephala* have their numbers "reduced by the sparrows and other birds, the caterpillar being conspicuous on the hedges."

I have found by direct experiment, most carefully conducted, that this species is not eaten by birds, and further, that other brilliantly-coloured larvæ, which do not seek concealment, are, as a general rule, rejected by birds. I think it probable that some birds may eat them, but I find that the bulk do not, nor have I by personal observation found any that do eat them.

The subject is one I have discussed at greater length in two communications to the Entomological Society, which have been published in their "Transactions." The opinion I entertain is that the brilliant colours of such larvæ serve the purpose of warning birds against tasting them, for on the other hand I have found that all dull-coloured larvæ which seek concealment, and are often nocturnal in their habits, are greedily devoured.—J. JENNER WEIR, 6, *Haddo Villas, Blackheath.*

TRIAL OF BOILERS AT BIRMINGHAM.

The following is in continuation of the correspondence we published last week:—

[REPLY TO FIRST COMMUNICATION.]

"*Midland Counties Herald* Office, Birmingham,
"20th July, 1872.

"DEAR SIR,—As the boiler trials ceased a fortnight ago, any complaints you have to make in respect of them would now be rather out of date. They should have been made at the time, when they could have been inquired into, and any redress appeared to be called for afforded. The boilers and the exhibitors of them are all dispersed and no longer amenable to the

Committee, so that I do not see what useful end would be answered by the course you propose to take.

"Mr. Cannell, Woolwich." "I am, sir, yours faithfully,
"(Signed), B. A. HALLAM."

[MR. CANNELL'S REPLY.]

"Woolwich, S.E."

"21st July, 1872."

"DEAR SIR,—In reply to yours, received this morning, in answer to my first communication, I beg to say that I was fully aware that the boiler trial ended a fortnight ago, and had you let us know the result soon afterwards, as should have been done, instead of keeping it to yourself until nearly the end of that fortnight, the same complaint now lodged might and would have been made; and I only regret that the Judges' decision was not made as quickly as our protest, for we are combining together, and as soon as the evidence can be collected it shall be duly communicated to you, and I sincerely hope that both the Committee and yourself will meet and adjust the complaint in an equitable manner to all concerned."

"Mr. B. A. Hallam."

"I am, sir, yours truly,
"(Signed), H. CANNELL."

"MY GARDEN."*

In concluding our notice of Mr. Smee's beautifully illustrated work bearing the above title, we shall extract his remarks on the Brussels Sprouts, one of the most useful and profitable vegetables that can be grown in a garden. Some may think it trivial to illustrate such common things as the Cabbage tribe, Parsnips, Carrots, and the like, but it must be remembered that Mr. Smee does not write for gardeners exclusively, but the general public, and there are many of the latter who are not familiar with some of the commonest of our kitchen-garden plants. To show, then, the value of Mr. Smee's book to such persons, we have selected a vegetable which ought to be found in every garden, and another grown in but few.

"For winter use," says Mr. Smee, "unquestionably, for a private garden, Brussels Sprouts (*Brassica oleracea bullata gemmifera*), are of more value than any of the Cabbage tribe.

They are perfectly hardy, and withstand the severest cold; for this reason they should always be grown in quantity, as they last from the beginning of October till late in spring. The Brussels Sprouts are so called because they throw up a stem about 3 feet high, with leaves all the way up. In the axils of these leaves miniature Savoy or sprouts are formed. It is curious that this vegetal does not remain true in many other places than at Brussels, although true seed may be obtained elsewhere. The produce is very large, for the little heads make up in quantity what they want in size. The head of the Brussels Sprout is a poor Cabbage-like development, which may be eaten, but is not so good as the little Sprout.

"The seed of our first crop is sown in the orchard-house in February. The main crop is sown at the end of March, in the open ground. The plants of the first sowing are planted out in May and June, as ground can be spared, and plants of the second are planted in July. The plants may be placed in rows 2 feet asunder, and 1 foot apart.

"In Scotland it is usual to sow the seed of Brussels Sprouts in August for a crop the succeeding year.

"A small quantity of Kohl Rabi (*Brassica Caulo-Rapa*), is sometimes grown at my garden for the cattle. Occasionally we have cooked it by way of experiment, but it is, at best, an indifferent vegetal. The



Brussels Sprouts, one-eighth diam.

My Garden, Its Plan and Culture: together with a General Description of its Geology, Botany, and Natural History. By ALFRED SMEE, F.R.S., &c. London: Bell & Daldy.

seed is sown in February and planted out in May, when by autumn the bulbs are fairly formed. It is particularly adapted



Kohi Rabi, one-eighth diam.

for dry summers, as the hotter and drier the summer, the finer the bulbs."

HARDY GEMS.—No. 2.

AQUILEGIA CERULEA.—Resuming my notes upon a few of the choice plants which every amateur and gardener should have in his flower-borders, few finer plants can be recommended for flowering throughout June and July than this blue Columbine, which is also known by the name of *A. leptoceras*. It is a native of the Rocky Mountains, and is undoubtedly one of the very finest species of the genus yet introduced to our gardens. It usually grows about 18 inches high, and the fact of its having withstood the severity of our winters for the last three years is sufficient guarantee of its hardiness. The leaves are broad, irregularly lobed, and dark green. The flowers are large, erect; the outer portion, including the five long spurs, rich blue, whilst the petals are white, the whole forming a charming flower, and producing a grand effect in a mixed border; the only regret being, that as so few amateurs have added this plant to their collections, it is too seldom seen.

IRIS IBERICA.—This is a member of a large family far too much slighted by everyone, for one and all, from the commonest and poorest-flowered kinds up to the very finest, produce a grand effect in the early spring months, whilst the peculiar and beautiful blending of colours displayed by many of the species is truly exquisite. I have not the slightest hesitation in saying, that were the particular plant now under consideration but an Orchid, it would command any price its lucky possessor chose to put upon it. In *Iris iberica* we have a gem for our hardy borders; it is very dwarf, seldom exceeding 6 inches in height, and it produces immense flowers of the richest hues imaginable. The large inner segments which turn downwards have a ground colour of greenish yellow, the latter prevailing over the former colour to a great extent; this is again thickly streaked and lined with a network of dark purple veins, the centre or disc being of a deep shining black. The outer segments are broad and stand erect like a crown, snow white, saving at the inner base, where they are freckled with a few cherry-red dots. Think of this, brother gardeners and amateurs, and say, Can you not one and all make a place for such a plant, even at the expense of one of your much-loved Tricolor Geraniums? Without wishing to disparage Geraniums, I have no hesitation in saying that if you only make a start with this one plant you will soon be breaking out in praise of the mixed-border system.

IBERIS GIBERTARICA.—In my first acquaintance with this plant I was much disappointed, not that my specimen did not produce fine flowers, but because they did not answer the description I had heard. The reason of this, however, was that I had not the true plant. Now the fault is rectified, and I would strongly urge the culture of this *Iberis* upon everyone having a border. It is of robust growth, and a profuse bloomer, the heads of flower usually measuring 3 inches in diameter. The

colour is white, beautifully suffused with pale rosy purple. It succeeds as well in the rock garden as in the open border, and thrives best when planted in good, somewhat light loam.

SISYRINCHIUM GRANDIFLORUM is a lovely member of the Iridaceae; it usually grows about 9 inches high, and produces its large, purple, bell-shaped flowers about March. There is a variety called *album* which blooms at the same time, and is an exact counterpart in every respect saving colour. They are charming border plants, and succeed well in rich loamy soil. This plant is also known by the names of *S. Douglasii* and *S. vernum*.

SISYRINCHIUM MULTIFLORUM.—This is a magnificent kind; it grows about a foot high, and flowers at the end of May and beginning of June. The flowers are large and bluish purple. It is both handsome and effective.

SPARAXIS PULCHERRIMA.—This is an Iris-like plant of surpassing beauty; it usually grows from 2 to 3 feet in height. The flowers are produced from long arching stems, and are pendulous, each bloom measuring between 1 and 2 inches in length, whilst the colour varies from deep crimson to soft rose. No words can do justice to the elegance of this plant.—**EXPERTO CREDE.**

RECENT CLIMATIC CHANGES.

GREENLAND is a name which seems ironical under present conditions of climate. It has always seemed to me that the land there has changed its appearance very considerably since that name was applied to it. The Esquimaux were apparently not known as inhabitants of Greenland to the Saga writers. The skzellings they met with were on the coasts of Labrador and farther south. They first appeared after the black plague had nearly destroyed the Norse settlements, and they completed the work the pestilence had commenced. They came from the north, probably from the area now occupied by the so-called Arctic Highlanders. The Indians who now live along the march, or frontier, bounding them and the Esquimaux in North America, have an apparently uniform tradition that the Esquimaux were formerly not neighbours of theirs, and that they came south across the sea from the islands beyond. I believe that I have sufficient facts by me to justify the opinion that the Esquimaux of both shores of Behring's Straits have been constantly drifting westwards and southwards, and that they are but recent occupants of their present area there. This will appear in a future communication to the Anthropological Institute. These facts are quoted to show that the Esquimaux race has been uniformly leaving its more northern habitat and seeking a more southern one. It is remarkable that the recent Swedish expeditions to the eastern coasts of Greenland found abundance of reindeer and musk-oxen there in areas formerly uninhabited by both animals. This emigration must have come from the north. I can see no adequate cause for a revolution affecting men as well as other animals in such a uniform manner, except the continuously increased severity of local climates, which has driven the inhabitants farther south.

Iceland has notoriously become more harsh and untenable in its climate since the days of the Norsemen. I will quote from a capital authority, Henderson's *Journal in Iceland*, pages 6 and 7:—"It is evident from ancient Icelandic documents that on the arrival of the Norwegians, and for centuries afterwards, pretty extensive forests grew in different parts of the island, and furnished the inhabitants with wood both for domestic and nautical purposes. Owing, however, to the improvident treatment of them, and the increased severity of the climate, they have almost entirely disappeared, and what remains scarcely deserves any other name than that of under-wood, consisting for the most part of Birch, Willow, and Mountain Ash. That grain was produced in former times in Iceland appears from the names of many places, such as *akkrar*, *akkrances*, *akkraheron*, &c., the word *akr* signifying a cornfield, and from certain laws in the ancient code, in which express mention is made of such fields, and a number of regulations are prescribed relative to their division and cultivation." Grain is no longer raised there. The Black Death, and other reasons, have been adduced for this cessation; but these are clearly inadequate causes, the real reason being no doubt the same which has caused grain culture to be discontinued elsewhere—namely, the increased severity of the climate.

What is true of Iceland is also true of Norway, in the most northern parts of which we find many names compounded with the Norse word for Barley, proving, as the best authorities

agree, that Barley then grew where it grows no longer. In Scotland many places show signs of the plough, and of having been sown with cereals where arable farming is now unpractised. It is notorious that not only in Scotland, but even in England as far south as Lancashire, large districts that were once covered with forests are now entirely bare of trees, and not only so, but trees cannot be made to grow there. "The Romans planted vineyards and made wine in parts of England where the Hop will now hardly grow."

In Northern Russia beyond the Dwina there is a vast area, formerly known as Biarmia, studded with the graves and other remains of a very prosperous people, whose wealth and civilisation are much descanted about by the Saga writers. Othere, the navigator, whose story was translated by Alfred, tells us that it was on arriving in their country after the dreary voyage round the North Cape, that he first again met with tilled fields and an agricultural race. This area is now deserted except by a few hunters and fishermen; the ancient inhabitants have moved westward and southward into Finland, &c. The best authenticated case of this desolation is the increased severity of the climate, which makes agriculture almost unendurable there. The Norse traders used to frequent Cholmogorod, the port of Biarmia, in great numbers, both for traffic and for fishing. This navigation continued until the early part of the thirteenth century, when we are told it was gradually put an end to by the increased difficulties with the ice in the White Sea, which becomes practically choked with ice; and when the English found their way to Archangel in the sixteenth century, so forgotten was this old trade that the journey was treated as one of discovery.

Farther east facts are less accessible. The following quotations from Von Wrangel's voyage illustrate my position:—

"In 1810 Hedenstrom went across the tundra direct to Utsjansk. He says, 'On the tundra equally remote from the present line of trees among the steep sandy banks of the lakes and rivers, are found large Birch trees complete with bark, branches, and roots. At first sight they appear well preserved, but on digging them up they are found to be in a thorough state of decay. On being lighted they glow, but never burst into flame. The inhabitants use them for fuel. They call them Adamoushtshina—i.e., of Adam's time. The first living Birch trees are not now found nearer than 3° to the south, and then only as shrubs.' . . . 'Another cliff, 30 or 35 feet high, beyond the Malaya Kurspataschnaja river, consists of ice, clay, and black earth. On drawing out some interspersed roots we found them to be Birch, and as fresh as if only just severed from the trees. The nearest woods are one hundred versts off.'" These facts show how far to the south the limit of trees has been pushed quite in recent times in Siberia—that is, how much more severe the Siberian climate has become—a fact, perhaps, connected with the persistent south-westerly drifting of Ugrian tribes from this area which has taken place during the historic period. The flora of our own bogs must disclose evidences of some kind on this subject. I should be thankful to any of your correspondents for facts which illustrate the question drawn from this or any other source.—HENRY H. HOWORTH.—(Nature.)

WINTER-FLOWERING PLANTS.—No. 2.

EUPHORBIA JACQUINLEFLORA.

This is a slender-growing evergreen stove shrub, with bright green leaves, white beneath. It is of long straggling habit, the shoots attaining a length of several feet in a season, and in winter they are studded to within a short distance of their bases with bright orange scarlet flowers. For continuance and abundance of bloom this Euphorbia is unrivalled amongst plants. I have one which was planted last May twelvemonth in a border at the back of a stove, and trained to a wire trellis; it last year made shoots 7 feet long, as thick as the little finger, and they were clustered with flowers throughout their length, except for a foot at their base, from November until late in April. Those having a back wall with plenty of light, and who wish for a winter-flowering plant, will do well to clothe it with this. Its shoots, covered for several feet in length with small but very numerous bright orange-scarlet flowers, render it the finest subject for wreaths that can be conceived; its only drawback is that the flowers are not of long duration when cut. The plant above alluded to is planted in a border which, owing to a boiler being at the other side of the wall, is quite warm, and the wall is also warmed by the flue of the boiler, sometimes unpleasantly so, yet the plant flourishes, and

freely produces seeds, which drop, and the seedlings appear plentifully. It is evidently at home. Cuttings also root freely in the border. The plant is equally well adapted for pot culture, and its requirements are satisfied by a moderate-sized pot, a 6-inch pot being large enough for a cutting of the current year.

Cuttings should be taken off when the shoots are from 3 to 6 inches in length. Slip or cut them off, pare the base smooth, and insert them singly in the smallest size of pot, using a compost of equal parts of sandy loam, sandy peat, leaf soil, and silver sand. Set the pots close together in a frame or under a hand-glass in the stove. Keep the cuttings just moist and close until they are growing freely, then admit air. Now we have to decide whether we wish for a plant with one or more than one shoot. If left unstopped the shoot will grow without giving any sign of side shoots until it has reached a height of several feet, whilst if we stop it to within 3 inches of the pot it will produce several shoots. I allow some plants to grow unstopped, but others are stopped. By stopping we have more shoots—not so strong as if we had one—and they may do well when a low plant is wanted. Such plants, then, from the lateness of their growth, do not flower so strongly as those with one shoot, which I train up to a neat stick painted green. The plants with but one shoot relieve the flatness of the low-growing bushy class of winter-flowering plants; whilst those stopped to 3 or 6 inches may be stopped again when they have made fresh shoots from 3 to 6 inches long, and this stopping may be persisted in until the end of August. Thus bushy plants may be obtained, but I do not consider them so handsome as plants more naturally grown, with merely their irregularities removed. With sticks the plants may be formed into compact specimens, which should be attended to in the various stages of growth, regulating the shoots as they advance. I think them far the finest when the shoots after a second stopping, say at the end of July, are allowed to assume their natural habit, turning the pots, so as to make the growth even all round; and the shoots, which may be 2 feet in length, gently arching over and studded with flowers, have a fine effect at midwinter. When we can grow it so as not to exceed 18 inches in height, and with its shoots semi-pendent, I know of no plant that will be finer for table decoration; its lightness and elegance, combined with the colour of the flowers, contrasting well with the associates of the dining-table.

When the plants are well rooted they should be shifted into 4-inch pots, and placed in a house where there is a temperature of 70° at night—say a lateinery—and encouraged with plenty of moisture, but avoid overwatering. The foliage must not be allowed to flag, otherwise the growth will be checked and the leaves may fall. Shift the plants into larger pots as soon as those in which they are growing are filled with roots, giving the last shift by the second week in August. The plants should be sorted into sizes; the weakest may have 6-inch pots, the medium-growing 7-inch, and the strongest 8-inch pots. The drainage should be good, and the compost used rather rough. It may consist of turfy light loam two parts, one part sandy peat—these chopped up rather roughly—one part leaf soil or old cow dung (hotbed manure will do), half a part each old lime rubbish, charcoal in lumps from the size of a pea to that of a walnut, and silver sand, the whole mixed; and in potting press rather firmly, but not very hard.

Water as required, and in September the plants cannot have too much light and air; but it is essential that a good heat should be maintained, so as to secure the thorough ripening of the wood. In a lateinery they will succeed well; the dry atmosphere required for the ripening of the Grapes will suit the plants exactly. In October remove them to the stove, assigning them a light dry position. Little water will be required in winter; the soil, however, should not be allowed to become so dry as to cause the leaves to flag.

After flowering the plants should be kept rather dry, and in April each shoot ought to be cut back to within a few inches of its base. Little water should be given until the fresh shoots are an inch or two long, then turn the plants out of the pots, remove the greater part of the old soil, trim in the roots, and place in pots 1 or 2 inches less in diameter, or any size that will hold the roots without cramping. Set the plants in a moist and slightly shaded house, or keep them in the stove, shaded from bright sun, moist as regards the atmosphere, but rather dry at the root, until they start freely, then keep them moister. They will need stopping, and if this be begun early and persisted in, fine bushy plants may be obtained in the

second season. Larger pots will then be required, but they need not be larger than 9 inches in diameter unless very large specimens are wanted, when 12-inch pots may be employed. In other respects they require the treatment recommended for young plants.—G. ABBEY.

GRAFTING.—No. 10.

Notch Grafting.—The scion ^A (fig. 1) is cut in the form *a'*, taking care to have a bud, *b*, at the back of the slanting cuts. This bud, with the scion to which it belongs, is let into the

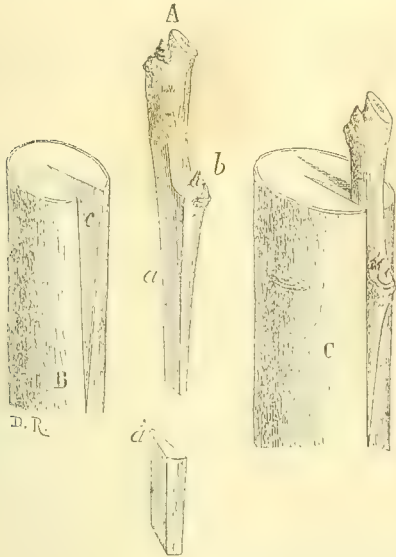


Fig. 1.

notch *c*, made in the stock *B*, as at *c*. The graft is then tied and waxed.

Fig. 2 represents a modification of this mode of grafting,

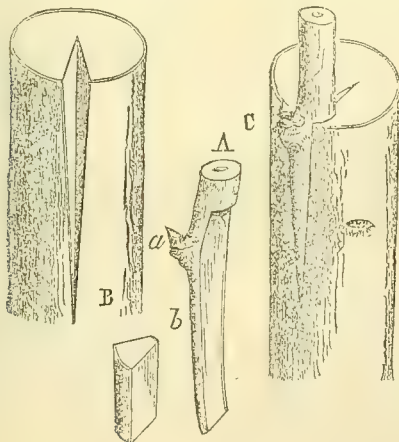


Fig. 2.

differing only in the scion *A* having a single bud, which is sunk in the stock in the same manner as in the last example. The scion *A* is cut slantingly, as at *b*; *b* is the notch in the stock, and *c* the scion when inserted in the stock. All that is now to be done is to wax the graft, taking care in doing so not to break off the bud *a*. According to the length of the notch, the bud may be inserted level with the top of the stock, as in fig. 2, or lower down, as in fig. 1. By this mode of grafting, the shoots of valuable or scarce kinds can be made to furnish as many scions as there are buds.—BALTET, *L'Art de Greffer*.

THE FRUITERERS' COMPANY, represented by the senior warden, Mr. R. Broadwater, and clerk, Mr. O. C. T. Eagleton, lately made the customary presentation of choice fruit to the Lord Mayor at the Mansion House. The Lord Mayor expressed

his acknowledgments, and informed the deputation that he hoped soon to have the pleasure of inviting the Court of the Company to dinner.—(*City Press*.)

AMONG THE MANX MEN.—No. 2.

It almost seems unbelievable that within the memory of man Irishmen attached their horses to their ploughs by their tails, yet so it was, and an Act of Parliament was required to abolish the practice. Equally approaching the incredible is the fact that in 1642 the Earl of Derby built here kilns to burn lime to use as a manure, and the people flocked to see how "the insane man" purposed to apply burnt stones to the island's soil for its improvement. Seeing it was useful they built "earth pots," as they called them, and burnt all kinds of stones in them, and wondered that they were not as successful as the Governor. The island's cultivators have grown wiser since then, and now so fully appreciate the value of calcareous manures that seven manufacturers of phosphate of lime and other bone manures advertise and have agents here.

Yet the House of Keys have thought it necessary to control one agricultural practice of the Manxites by the institution of what are called "Fodder Juries." If anyone informs the Coroner that a named party keeps more cattle than his land can support, four jurors are summoned, who inquire, and as much stock as they report is excessive is sold, and the prices paid to the owner. A part of that stock I think must be peculiar to the island, for never before did I see brown-woolled sheep. In most of the flocks are some, but one small flock were all brown. The colour is a dark chocolate. The sheep so coloured are called *hugh-dhoan*, from the Manx names *hugh*, a mouse, and *dhoan*, brown. Woollen cloths made from their fleece are exceptionally durable; and a coat made of it and undyed, called a *giare chooot*, may be still seen on some of the men at the southern extremity of the island. I must now pass from its animals to its plants.

First let me show a little critical botanical acumen by observing that there is no better illustration of the misleading liable to arise from taking the specific name of a plant from the place where it was first found than is afforded by *Brassica monensis*, for it is not found here only, but in various places along our western coast. I am glad I thought of this, because it enables me to exhibit another little bit of learning—namely, that *Bresych* is Welsh for a Cabbage, and *Bresychu* for to crumple, so the old Britons may have had Savoys from time immemorial.

In every part of the island the Ash is the most prevailing tree, and the oldest trees are Ash. I surmise that the reason for this is the efficacy attributed to it as a safeguard against fairies and witches. The herdsman carried an ashen staff as a safeguard for his cattle; scythe and sickle handles were of the same wood, and lovers pledged themselves beneath an Ash's shade.

The gardening of the island is anomalous. I have not seen a cottage garden in any one district. If a plot of ground is attached to a cottage, if planted at all, it is with Potatoes, but nothing else. The towns are supplied with vegetables from market gardens. Yet the love for flowers is nowhere more universal. Every cottage has pots of Pelargoniums in one or more of its windows—in very many every window is filled with them. This is not confined to the better class of cottages, but prevails in all; even the loop-hole windows of what we should call hovels are bright with this flower, and I use the term bright purposely, for the plants are well grown, and the blossoms abundant and varied. In very poor cottage windows it is quite usual to see five or six varieties—white, pink, crimson, and scarlet.

The absence of garden culture has not been overcome by "The Isle of Man Floral and Horticultural Society." It has desisted from offering prizes to cottagers, for no exhibitors came from among them. This absence of cottage kitchen gardening, I think, is traceable to the herring fishery. I am not joking nor employing a bewildering suggestion like that of Kentish men, who say, "Tenterden church steeple caused the Goodwin Sands." I think the herring fishery causes the neglect of kitchen gardening, because the fish are the staple food of the island. At all seasons of the year the herring, either fresh or cured, forms a part of every meal of every cottager, and its only accompaniments are bread and Potatoes.

Whilst I am writing is the height of the herring fishery, and so essential is it to the subsistence of the islanders, that an addition to the Litany is made to pray for the fishery's success. Last Sunday at St. Thomas's Church the clergyman

offered up this petition—"May it please thee to give and preserve to our use the kindly fruits of the earth, and the blessings of the sea."

The importance of this fishery is shown by these statistics—about four hundred Manx boats are employed in it, using more than 2,000,000 yards of netting, and having as their crews nearly three thousand men and boys. The number of herrings caught in one season varies greatly. One authority states that forty thousand barrels, each containing eight hundred fish, have been cured in one season, of which ten thousand barrels were retained for consumption in the island, and when we consider the enormous quantities that are consumed fresh, we feel the justification of the doggerel rhyme—

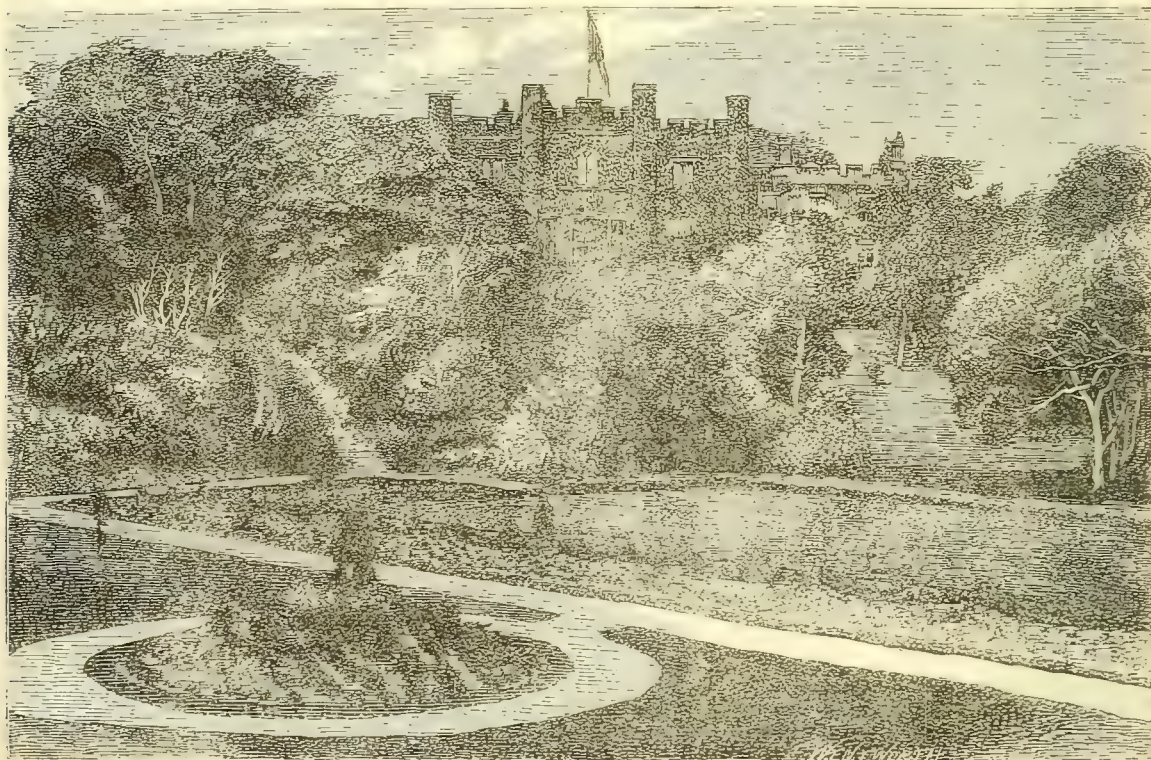
"Herring's the food of Mona's greedy sons,
Who eat them up as fast as butter'd buns."

The vast number of carts loaded with salt-sprinkled herrings which I meet daily induced me to ask a fisherman if they were

ever caught in such large quantities as to be used for manure, as sprats are on our eastern coast. The look which accompanied the responsive "Never!" expressed as much of pity as of indignation.

The vast daily consumption of fish justifies, I think, the conclusion that it causes the neglect of culinary vegetables; and we can see why these, when first brought here to market, caused the surprise I mentioned in my previous notes. No records either private or public make the slightest allusion to such an enclosure as a garden being attached to a house until the year 1651, when "a clerk of the garden" was appointed at each of the castles—Rushen and Peel.

Potatoes are the next staple food of the islanders. They are one of the principal field crops, and are very prolific. I never saw healthier crops, and have looked without success for a diseased plant. Seaweed is the principal manure used for their culture; but bone manure is also applied. The reason



The Nunnery.

for the latter being so largely consumed on the island appears to be the deficiency of farmyard manure, for there are very few oxen kept, and the agricultural horses are also small in number, for the far greater portion of every farm is grass land, and the chief stock kept are sheep. The beef in the market is bad and small in quantity, but the mutton, lamb, and veal abundant and good. Widely differing as are the prices of those four meats in London, they all bear one and the same price here—10d. per pound.

The absence of kitchen gardens which I have mentioned is not a characteristic of the labourers' cottages only, but equally of the better, and even many of the best residences; but all have good flower gardens. Very superior among these is the Nunnery. The gardens and gardening there are good in all departments. Tradition states that where this residence now stands a nunnery was founded by St. Bridget in the fifth century. It was a highly privileged establishment, its prioress being a baroness of the island. Nothing remains of the ancient structure but a portion of its chapel and main gateway. The present mansion is comparatively modern, castellated, and nearly enveloped by Ivy. Its present possessor, a liberal promoter of the island's horticulture and agriculture, is Major Gold'e Taubman. He succeeded to the estate on the death of his uncle, Brigadier-General Goldie, who fell at the battle of

Inkerman, as is recorded on a monumental obelisk erected near one of the approaches to the mansion by public subscription.

The house is on an elevation, and the flower garden sloping from it in front terminates in a terrace 300 feet long. On each side of this the bedding-out is tasteful, but I shall only note two facts which struck me as peculiar. A row of *Calceolaria Aurea floribunda* is on each side of the walk, consequently there are 600 feet of it, yet not a plant showed the slightest symptom of that gangrene of the stem to which it is so liable. Does a similar exemption occur in all mild seaside localities? An exactly opposite fate attends the *Humea elegans* here. Mr. McDonald, the courteous and intelligent gardener, has wished to grow it on the crown of each of the conical beds, but he cannot effect his purpose—it always "fogs off."

The melonry and vineries are evidences of skilful fruit-culture, evidence strengthened by 368 Peaches being gathered from two trees this summer, although they are on the back wall of a vinery.

Roses and Pansies must be the special favourites of the family, for they are in profusion, and never have I seen them more healthy or more productive of flowers. In the plant houses *Lisianthus Russellianus* is unusually abundant, and its purple flowers are worthy for what they are here required—room decoration. All the house plants, including *Allamanda*,

Clerodendron, Bougainvillea, Erica, Latana, Palms, and Ferns are evidences of good culture. A fernery now completed, but not fully furnished, will be a graceful addition, communicating with the house.

The eighth annual Exhibition of "The Isle of Man Floral and Horticultural Society" was held under a spacious tent in a field adjoining the Nunnery on the 17th and 18th of July. As I expected, the chief features were flowers and Ferns, and the prizes for these were chiefly won by those belonging to Major Taubman; W. F. Moore, Esq., Cronkbourne; G. W. Dumbell, Esq., Belmont; S. Harris, Esq.; and Capt. Pesketh, Hampton Court. Mr. McDonald, the gardener of Major Taubman, and Mr. Dale, the gardener of Capt. Pesketh, evidenced mastership in their calling. Deemster Drinkwater, the Lieut. Governor, and Mr. Harris were strong exhibitors of fruits and

kitchen vegetables, and it is into those departments of gardening that the islanders need to be led. It is sad to witness their total ignorance or neglect of those sources of comfort and health. The cut Roses were especially good, and worthy to compete with the best at our metropolitan exhibitions.

One great deficiency characterised the whole Show—not one plant, flower, or vegetable was named. Thus one utility of such shows was ignored—anything admired and wished for could not be ordered from the nurseryman, inasmuch as its name was not known. A named plant or flower is always more interesting than one unnamed, and this was fully evidenced at this Show, for I had quite a following of listeners because I told the names to my companions, and one of the listeners called to one of his friends to come, for "Here's a gentleman who knows the name of all the things!"—G.

DIEFFENBACHIA BAUSEI.

THE present season has introduced to our notice several valuable new forms of plant life, conspicuous amongst which

is the subject of these remarks, as well as of the accompanying illustration, for which the readers of the Journal are indebted



Dieffenbachia Bausei.

to the kindness of the Messrs. Veitch & Sons, Chelsea, who are now distributing this choice novelty.

Dieffenbachia Bausei is not an imported species, but a garden hybrid, the result of a cross between *D. picta* and *D. Weirii*, having originated in the Royal Horticultural Society's garden at Chiswick, a spot so famous in days of old, and which I trust is destined to even eclipse its reminiscences of days that are gone.

This genus is popularly known by the name of Dumb-canes, from the fact of their juices being so acrid as to blister and swell the tongue, if applied to that member, to such an extent as to cause suffocation; young gardeners, therefore, or anyone not well acquainted with these plants, should be very cautious. They are all handsome tropical-looking plants, and that now

under consideration must certainly take first rank. It is a sturdy-growing plant, bearing broad leaves from 12 to 15 inches in length; the ground colour dark green, irregularly blotched with yellowish green and white. The stem is dark green, whilst the petiole is ivory white, affording a rich contrast which adds materially to the effectiveness of the whole.

Those having a plant stove may undertake the cultivation of *Dieffenbachias*, their principal requirements being strong heat, and an abundance of water both at the roots and overhead. To preserve their beauty, however, care must be taken that the water is free from impurities. For soil, use a mixture of loam and peat in equal parts and some rotten dung, adding a little sharp sand; drain well. The importance of drainage cannot be too strongly impressed upon the minds of amateur plant-

growers, as the want of it is the rock upon which so many founder.—*EXPERTO CREDE.*

NOTES AND GLEANINGS.

WE are informed that prizes for collections of ECONOMIC ENTOMOLOGY are offered for competition in 1873, and the following rules relating thereto have been issued by the ROYAL HORTICULTURAL SOCIETY:—

£10 for a collection of British insects injurious to some one order of plants used for food, as Cruciferae, Leguminosae, or Corn. The order may be selected by the competitor.

£3 for a miscellaneous collection of British insects injurious to plants used as food.

£5 for a collection of British beetles injurious to timber and fruit trees either growing or felled.

£2 for a collection of British insects injurious to some one timber or fruit tree.

The insects to be exhibited in their various stages of development, accompanied by specimens, models, or drawings of the injuries caused by them.

The collections to be sent in, addressed to James Richards, Esq., Assistant Secretary, Royal Horticultural Society, South Kensington, S.W., on or before November 1st, 1873.

— We understand that Mr. RECORD, whose name is so familiar to our readers by his thoroughly practical articles, and who is well known as an excellent gardener, is about to quit the charge of the gardens of Hatfield House, in which he has effected great improvements. We feel assured that, wherever his lot may be cast, whatever he may do will be well done.

— THE valuable collection of ORCHIDS belonging to the late Rev. WILLIAM ELLIS was sold at Stevens's rooms on the 19th and 20th of July, and realised between £500 and £600. *Dendrobium Falconeri* brought £12; *Aërides Schröderi* the same; fine plants of *Oncidium sarcodes* and *macranthum*, £5 10s. to £6; *Angræcum Ellisii*, £6 10s.; and *Lælia Ellisiana*, £7.

CAMPANULA VIDALII.

THIS little-known half-hardy plant is one of the most beautiful of the numerous and ornamental family to which it belongs. It is a native of the Azores, having been found by Capt. Vidal, after whom it is named, on Flores, one of that group of islands. When first introduced by means of seeds by Mr. Wallace two or three and twenty years ago, it was feared that, being a maritime plant, it would prove difficult of cultivation; but experience has removed this impression, for among really valuable ornamental plants there are few more easy to cultivate.

The beauty of the flowers, their profusion and long-lasting quality, commend this *Campanula* powerfully for the purpose of summer and autumn decoration of the cool conservatory or greenhouse. The distinct type of its beauty and habit of growth distinguishes it from anything at present in general use for conservatory embellishment. Well-grown plants, either large or small, with their masses of creamy-white flowers in sturdy yet graceful spikes or panicles, would contrast well with, and relieve the masses of *Pelargoniums* of various kinds that are to an almost exclusive extent so generally employed during summer and autumn in the conservatory. The *Campanula* will cost no more but rather less than those latter in the shape of trouble and labour, while in most respects their culture, after they have passed the seedling stage, is so much alike, that it may be conducted in the same structure or under the same conditions, whether in-doors or out-doors, during summer.

I have seen it succeed very fairly as a bedding plant in the hot dry neighbourhood of London, but thought it suffered rather from atmospheric than earth drought. I used to keep up a specimen of it in its place, out of doors, in the herbaceous department at Kew, but the hot sandy soil and arid atmosphere at midsummer proved rather trying to it: it lost much of its foliage, though its flowers endured well. In all the warmer coast localities of England, Ireland, and Scotland, except, perhaps, the north-east coast of the latter, there is no doubt it would succeed well as a bedding plant, and as a summer and autumn-flowering auxiliary to the mixed border. For this purpose it would require different treatment to those that might be grown to full-sized specimens for in-door purposes, but more of that afterwards.

The habit, it has been stated, is good, and the flowers profuse and beautiful; but a little more particular description of the whole plant may serve to interest my readers a little more

deeply in this very ornamental subject. I have never grown plants of a greater age than three years, and think they are not worth growing after two years, because the perfection of the habit is reached then, and begins to decline afterwards. A well-grown two-year-old plant will be furnished with several tiers of stout branches arranged in the fashion of a many-branched candelabrum, and extending in all directions from the stem about 18 inches outwards, but somewhat graduated in length, the lower tiers being longest, the upper ones shorter, and the plant will be about 3 feet high. The leaves are thick, softly leathery, dark and shining green, about 5 inches long, half an inch wide at the point, and diminishing slightly towards the base, and arranged in a loosely roseolate fashion at the extremities of the branches. The flower-stems terminate the branches, and are from 1 to 1½ foot in length, bearing numerous creamy-white pendulous flowers in open spikes or panicles. The flowers are about three-quarters of an inch in length, and nearly as wide at the base, but narrower at the mouth or opening of the corolla, the extreme edge of which is slightly recurved. Like the leaves, they are thick and of a shining waxy appearance, and retain their freshness for a long time after opening.

As to cultivation, it has already been stated that the plant is perennial, but is liable to decrease in beauty after the second year, if it has been well grown and freely flowered. This is owing to the fact that the branches after flowering die off, and are not reproduced, but merely succeeded by new tiers higher on the stem, thus causing annually increasing legginess. This being the case, it is requisite to treat the plant after the manner of biennials, so as to have an annual succession of young vigorous stock.

Plants may be flowered the first season from seed if desired, but will be small, though no doubt useful in many ways, coming into flower as they do in the months of August and September. In order to flower them the first season, the seed should be sown in a propagating house or hotbed in February; if not to be flowered the first season, sowing may be deferred till the end of March or beginning of April. The seedlings should appear in ten or fourteen days after sowing, and when they can be handled, should be pricked off into small 60-pots, singly, and placed in a mild hotbed. When they are well established in these, let them have another shift, and be established in the larger pot before taking them out of heat. They may be grown either in the open air or in a cold frame during summer, the latter being preferable, because they are then subject to fewer alternations. Shifting on as they increase in size will require to be carefully attended to; but if they are to be flowered the same season there must be no shifting after the end of June till the flower-stems begin to make their appearance, when they may receive a small shift. Those that are not to be flowered till next year may receive their last shift for the season so late as the middle of August. A cool rather dry greenhouse temperature is the best to winter them in; if frost is kept from them, that is all the protection they require from cold, but they are impatient of damp.

In pot culture, a compost of turfy loam two parts, with one part old well-decomposed manure, and a very liberal dash of gritty sand, and nodules of charcoal or old lime rubbish with the dust sifted out, will grow the plant to perfection. It requires to be well drained, but also to be well supplied with water when making growth, and is benefited by occasional waterings with liquid manure. In large specimens the branches may require the support of stakes as they begin to increase in weight before flowering, but they acquire their natural symmetry best when left alone till then; and unless the specimen happens to be deformed from any cause, any artfulness in training is neither needful nor tasteful.

Plants for the flower garden should not be raised till June; they will not flower early enough to be of any use in the open air the first season, no matter how early they may be raised. Three-inch pots will be large enough to winter them in, and early in the following March they should be shifted into pots two sizes larger, which, if space cannot be allowed for larger plants than these are capable of sustaining, will be sufficient for them till they can be placed in the open ground. About the middle or end of July they will begin to unfold their flowers, and will continue to do so to the end of the season. The trouble and labour of tending seedlings of this description for nearly a whole season will present a serious objection to the adoption of this fine plant as a bedding subject, especially where labour is at a premium; but stock cannot be kept up satisfactorily in any easier way.

Cuttings root freely enough, but are difficult to get in quantity, except duplicates or reserve plants are kept for the purpose of yielding stock. Another objection to cuttings is that they branch less freely, and consequently flower less profusely, than seedlings.—W. S. (in *The Gardener*).

WORK FOR THE WEEK.

KITCHEN GARDEN.

CLEAR away haulm, stumps, and the refuse of crops directly they are over, and, even if the ground is not wanted, dig it. At this season, however, there is seldom ground to spare, for it should be remembered that the supply for several months in winter and spring will depend on diligence in planting-out a large supply of those vegetables most likely to be in demand. Potatoes and other crops soon coming off may be interlined with *Broccolis* or winter greens; and if there is not sufficient room, a quantity may be planted 1 foot apart to wait for ground as it comes in, when the whole may be again planted at proper distances, or every alternate row and plant in the row may be removed to vacant ground. Get *Endive* planted-out on very rich soil, also *Lettuce* to maintain a succession, and attend to other small salad herbs. See to securing a good supply of *Parsley* for winter use; it is always largely in demand. A good bed should be planted in some convenient place, so that it may be protected during severe weather in winter. The soil should be of a light texture, deep, and well drained, as a preventive against damp in winter. Select a piece of light open ground, and prepare it for *Winter Spinach*, by giving it a heavy dressing of manure, and trenching or digging it deep. This crop should be sown about the 15th of the month in drills in beds, allowing wide alleys, so as to be able to gather the crop without treading on the soil; also provide ground for winter *Onions*. *Tomatoes* must be regularly attended to, keeping the shoots thin, and stopping them above a cluster of fruit, for if the plants are allowed to ramble and grow too freely there will be a poor chance in an unfavourable season of securing a good crop of fruit. *Shallots*, if left in the ground after the bulbs are matured, are apt to mildew and decay in wet weather, therefore they should be pulled as soon as the tops begin to decay, and spread out in an airy place to dry before storing them away.

FRUIT GARDEN.

The tendency to excessive luxuriance frequently exhibited by espalier trees, renders disbudding, stopping, and shortening shoots essential. The whole principle of pinching is merely this—in the first place, to pinch all young shoots not necessary for the framework of the tree; secondly, to stop those shoots which threaten to overgrow their neighbours, by which means a due equilibrium of the branches will be maintained; and finally, having commenced a system of repression, to continue it in regard to lateral shoots which are developed by reason of this practice of stopping. While, according to the general plan pursued, every encouragement is afforded to the development of the roots by the application of soils, a necessary limitation of wood destroys the unity of force between the two. Root-pruning is thus obviously suggested, and may at the proper season be practised with advantage. If attention has been paid to pinching the shoots according to previous directions, there will at this moment probably be found on the branches which have undergone the operation a little tuft of three or four, or even more, lateral shoots. It is a good time now to look to these heads of young spray; in some cases the chief shoot may be shortened back to the last lateral, allowing it to become the leader, and if that should take a development stronger than is advisable, it must again be pinched. There are more cases of this kind afforded by the Peach than any other fruit tree. The principle holds good for all of them. The practice above alluded to, if regularly pursued for several seasons, will yearly become less troublesome; the tree will be used to such treatment, and will gradually acquire the desired habit.

FLOWER GARDEN.

The flower garden now will be in its greatest beauty, and every means must be taken to keep the turf, gravel, and edgings in order. Dead flowers should be picked off daily, and stray growth reduced within proper limits. Trailing and climbing plants should be frequently gone over to keep them neatly trained, and secure them from rough winds; for the same purpose examine *Hollyhocks*, *Dahlias*, and other tall-growing plants. Remove the dead flowers from *Roses*, and

encourage the production of autumn blooms in the *Perpetuals* by watering with liquid manure and mulching the surface of the ground where practicable. Continue the propagation of plants for next season, in which dispatch with the more delicate *Pelargoniums* should be urged to get them established before winter. Fork the ground slightly around *Dahlias*, and mulch the surface with well-decayed manure. Take care that the laterals are well staked-out, and use every means to trap earwigs and other vermin which injure the flowers. Look over the faded blooms of *Pinks*, extract the petals from the pods. Should wet set in, these decayed petals will act prejudicially by retaining moisture round the lower part, which will cause rotteness and consequent destruction. Rooted cuttings of *Pansies* for making up the autumnal beds will now be ready, or nearly so. It will, therefore, be necessary to make the beds requisite for their reception. In doing this it is absolutely necessary that wireworms should be caught; therefore the compost should have repeated turnings, for these enemies are as destructive amongst young *Pansies* as they are to *Carnation* layers. Throw out the soil from the *Tulip* bed on the paths, so that it may sweeten previously to being returned. Some florists adopt with considerable success the plan of sowing Mustard seed on it, which, after having vegetated, is mixed with the soil; this is believed to be the means of banishing wireworms from the bed.

GREENHOUSE AND CONSERVATORY.

In keeping-up a stock of plants there must necessarily be, besides those depended on for the principal show of bloom, younger branches of the same family advancing to supersede their seniors whenever old age or decay shall have consigned the latter to the rubbish heap. I previously adverted to the rapidity with which even difficult plants may be grown; any plants, therefore, in pots, which it is desirable should be grown quickly, and to aid which purpose have been allowed a kind of rest after their spring growth, may now have a shift according to their habits and condition. It will not, however, be advisable to give them so large a shift comparatively at this season as might have been ventured upon in the spring, as whatever wood the plant makes after the present shift must be ripened, unless in the case of such free-flowering plants as bloom on the current growing wood. As this shift will have to carry the plants through the winter months, the drainage of the pots should be ample. After a few days a free open situation should be selected for the newly-potted plants, that the new growth may be made under favourable conditions for its maturation. The greatest care must be taken where valuable tender-rooted plants are out of doors; the heavy drenching rains we have had will (unless the plants have been well protected), have placed their roots in an unfavourable state, and no time should be lost in removing such under the cover of glass. The more hardy plants left out of doors should be examined frequently to see that the water passes freely through the pots.

STOVE.

If there are sickly or badly-rooted specimens here they must be frequently examined for red spider, otherwise they will become a nursery for this pest, which will soon spread to adjoining plants. Also guard against the increase of mealy bug, and keep black thrips and green fly in check by timely applications of tobacco smoke. See that young growing stock is not allowed to suffer from want of pot room, and attend carefully to the watering, giving manure water to all plants in free growth that enjoy it. *Gardenias*, &c., which have been removed to the conservatory while in bloom should be replaced in heat as soon as their beauty is over, in order to allow of their growth being matured before the dull cloudy days of November. Give every attention to plants for winter blooming, affording them a moist warm temperature, and using every care to prevent their sustaining any check at the present season. The growing stock of *Orchids* will require the assistance of a little artificial heat if the weather is wet and cloudy. Shading must be promptly attended to when bright sunshine occurs. Allow them, however, as much light as they will bear without injury, using a very light screen, and that only when absolutely necessary.—W. KEANE.

DOINGS OF THE LAST WEEK.

SUCH a week of sunshine and shade, calm and storm, dryness and deluge, we never remember; and these alternations came in such close succession as to baffle the most weather-wise. The lightning, thunder, and deluges of rain on the

evening of the 24th were something terrific; but for the rain we can hardly conceive how more injury was not done by the lightning. Amid the blinding lightning and the deafening thunder, we rejoiced in the deluge of rain, as the lightning is less dangerous, for it is carried along on a watery basis. Some years ago we should have lost a fine Elm tree had it not been that the bole of the tree was thoroughly drenched before it was struck by a thunderbolt. That stroke brought down four large barrowloads of bark, and the tree is still flourishing. Our impression then was, and still is, that that lightning flash, which pretty well tumbled down all the men in a covered shed, to which they had retired for safety, would have shivered the noble Elm, but for the rain having previously soaked the trunk, and thus given a ready passage to the lightning. Even that, however desirable in a thunder storm, is not always efficacious. On the Wednesday evening, independently of other trees, which we see have been touched less or more, we had a fine Ash tree split into many pieces, and the head scattered about; one fine Oak was also cleft from top to bottom, and a deer killed at its base. We just mention the latter fact to enforce the simple caution, "Never go near the bole of a tree in a thunder storm." If a little shelter must be had, get as near the outskirts of the branches as possible. The dread lightning, if it come down, will generally descend by the bole. A person standing 20 to 30 feet from the bole would be comparatively safe. Of course, we are speaking merely physically, and without having reference to an overruling Providence. That Providence, however, often works in perfect accordance with our acquired intelligence. It is not unusual to find that cattle which have clustered together in an open glade in a thunder storm, are left unharmed, whilst others that have crowded beneath large trees have suffered severely.

One more lesson these thunder storms with their deluges of rain may teach gardeners and farmers alike, and that is the evil of thick sowing, unless followed by quick and proper thinning. Whole fields of Wheat, where the seed used was very abundant, are prostrated, and will never rise to thoroughly perfect the heads of corn, whilst other fields with fewer and heavier ears are standing mostly erect, and that chiefly because a much smaller quantity of seed corn was used at first, and the plants tillered so much better, and the stems were individually stronger.

KITCHEN GARDEN.

We have sown Cabbages, Lettuces, and Endive for the last time, also Spinach for the first main winter crop. This has been the very season for weeds, and but for cutting up in sunny days they would soon overspread the ground. Owing to weeds it has been difficult to keep walks neat without salting them, and then, again, that makes them soft and moist in winter unless fresh fine gravel is added.

We gave a good sprinkling of salt to *Asparagus* and *Seakale*, keeping it, however, off the leaves. For such seaside plants salt is not only a good stimulant, but it is the easiest means to keep weeds from growing among such crops. When *Asparagus* is grown in rows from 24 to 30 inches apart, and a good piece is thus cultivated, it is hardly possible to get among the plants when once they are permitted to grow freely. A fair salting renders the hoe unnecessary. Though the row system has its advantages, the bed system also has its advantages, and one of these is, by the trench or alley between the beds, easier access is afforded to the latter, whilst the alleys themselves may produce good summer crops, as Cauliflowers.

Vegetable Marrows.—Where room is limited these should be stopped to get fruit near at home, as in the case of Cucumbers; but where a wildish place can be had for them, as the site of a rubbish-heap exposed to the sun, or where ground is of no consequence, then it is well to allow them to spread well with but little shortening, and under such circumstances the produce will be plentiful. Large Marrows are wanted for pies and puddings, but the delicacy of a Marrow depends very much on its small size and the few days' growth it has had.

FRUIT DEPARTMENT.

We nipped and pruned trees out of doors as we could get at them, and watered and regulated those under glass. The extreme heat required additional attention in watering, sprinkling, and even slight shading. We went on preparing Strawberries for forcing. Our Strawberries are getting thin, as they suffered alike from the rains and the heat. Early air-giving in all glass houses would save many mischances. When it has been neglected to too late an hour it is better to give just a little at first, and damp the floor of the house, than to give

a great amount of air at once. All extremes should be avoided. When plants are steamed up with moist vapour until it reaches scalding point, the sudden introduction of a great quantity of hot dry air acts often on the leaves like the heated air from a furnace. An inch or two given at first would have allowed the air loaded with hot vapour to escape, and the fresh air entering would have been mollified and moistened before reaching the plants. By-and-by, when all was safer, more air could be given prudently. We mention this all the more, because in such a case of neglect it does seem so natural to pull the sashes down, as if too much air could not be given at once. It is much safer to give a little air at the highest point at first, and to dump floors and stages, and even give for a short time a slight shading.

ORNAMENTAL DEPARTMENT.

Beds.—Calceolarias have suffered a little from the rains, and the water has made the leaves of some of the *Geraniums* far too large; therefore, to obtain fine trusses, we shall have to thin-out some of the leaves. Thanks to our brushwood staking, the rains and winds have not disturbed the symmetry of the beds. We mulched all the Calceolarias with rotten dung, and we mulched other beds with short grass from the machine. We feared the drying effects of the hot days. We did not foresee the thunder rains, but even then the grass will do no harm, and, like our bush-staking, it will scarcely ever be seen.

We had several notes we wished to introduce here respecting the management of plant houses, and especially the importance of giving flowering plants a short rest after finishing flowering; but these and other matters have been so well defined by Mr. Keane, under Greenhouse and Conservatory, page 83, that we would direct particular attention to that long, valuable paragraph.—R. F.

TO CORRESPONDENTS.

* * We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

SEEDLING STRAWBERRY (W. Thomson).—The flavour of your seedling Strawberry is very good, and the flesh so firm that the fruit came to hand in excellent condition after so long a journey. It is a fine noble fruit. The single fruit is more acid than the other, but in this respect not more so than Sir Charles Napier. Your seedling Pansy must be a valuable acquisition.

PARAFFIN OIL STOVE (E. G. G.).—We cannot inform you whether a paraffin oil stove will keep the frost out of your small house. That will depend on the size of stove and the degree of frost you want to guard against. Sow the Calceolaria seed now, and make cuttings of your Pyrethrum.

WEEDY ASPARAGUS BEDS (Preston).—Perhaps your gardener has a preference for weeds. It is only on that supposition that we can account for him differing from you in keeping the Asparagus beds "smothered with weeds," for most assuredly all the nutriment drawn from the bed to grow a crop of rank weeds would be much better applied to the production of Asparagus.

PEAS (R. B. L.).—The Crown Pea.

ROSES (P. T. B.).—The sport, though not common, is not unusual. The Roses that will suit you are—Red: Charles Lefebvre, Pierre Notting, Marie Baumann, Duke of Edinburgh. White: Madame Rivers, Madame Alfred de Rougemont, Queen Victoria, Reine Blanche. Yellow: Gloire de Dijon, Céline Forestier, Maréchal Niel, Madame Margottin.

SHORTENING ROSE SHOOTS (An Amateur).—Yes, the shoots may be shortened now, if necessary; if allowed, however, to grow, the ends of the strong shoots will flower well this autumn, and can be cut back for next year. No Rose strikes better than Gloire de Dijon. Plunge pots of cuttings in a moderate hotbed. Shade from direct sun, and give sufficient air; the cuttings should be kept moist, but not damp and close.

BUSH ROSES (C. A. J.).—The strong shoots of Roses on their own roots ought certainly to be kept, all old and weakly ones being cut away. This induces the plant to throw out strong stems from the base. The strong young wood had better not be pruned till the spring, and as you wish to grow them tall, they need not be much shortened back. It is a bad plan to grow Roses on their own roots in the open lawn with grass up to the stems. No Roses on any stock can stand it, far less those on their own roots. Cut a circle from 2 to 3 feet in diameter, and mulch during winter. Remove the straw litter in the spring, and fork-in all that is short. Give liquid manure in the summer if you want the Roses to grow tall. We cannot name Roses from leaves. Roses move best in October.

ORANGE TREES, &c. (E. M. M.).—The clayey loam would have been better for the purpose of plastering up the split in the bark of the Orange tree if it had been mixed with cow dung, which would have kept it cooler and moister. The decayed Oranges will not do much for it as a manure. Use sheep dung or rich farmyard manure. Plaster the bark of the Lime tree with the clay and cow-dung mixture. Wash the bark of the Beech tree with strong brine. Your Jasmine will soon develop into blooming condition.

LILIUM AURATUM (J. T. G.).—We cannot tell what is the matter with your *Lilium auratum*, for you give us no particulars as to the soil it is in, or the treatment it has received. It succeeds best in peat or other vegetable mould.

PLANTING A VINEY (A Six-years Subscriber).—You may plant your Vines at once; it will give them a chance to establish themselves before the autumn, consequently they will start stronger next season. The best Grape Vines to plant in a cool house are Black Hamburgh and Black Muscat of Alexandria; the best white, Buckland Sweetwater and Foster's White Seedling; for a Muscat house, Muscat of Alexandria and Black Alicante. The best late-keeping Grape is Lady Downe's. Plant the Vines 2 feet 9 inches apart.

TREATMENT OF ORCHARD-HOUSE TREES (W. C.).—By a little management you may keep your trees within bounds. The young wood should be thinned-out and the trees cut-back to a certain extent annually. If you were to cut them back too much all at once you would fail in securing a crop the following season. We keep up a supply of healthy well-furnished trees in our orchard house (all the trees in pots) by purchasing four or five "maidens" annually, and fagotting as many more of those which may be badly furnished or out of order.

ACHIMENES SHOOTS BROWNED (G. J. B.).—The shoots may be browned owing to the sun's rays falling powerfully on them whilst wet. Give them more heat and shade them from bright sun. The tops probably die off from want of heat and from too much water overhead. Maintain a moist atmosphere, but avoid watering overhead, especially after the flower-buds show.

CORN BLUEBOTTLE FOR BOUQUETS (Idem).—To have it in flower in May and June the seed should be sown in April or May of the previous year, and the plants pricked-out when large enough to handle in good, rich, light soil in an open situation. In September plant them out in a warm sheltered spot, where they will flower early in summer. Some place the plants in small pots, winter them in cold frames, and plant-out in spring; sometimes they are shifted into larger pots, their growth encouraged, and then flowered in the greenhouse. The double-flowering dwarf sorts are best for the latter purpose. Sow them in July, prick off the seedlings in small pots, shift them into larger pots, and grow them on shelves near the glass in the greenhouse, and they will flower in early summer.

RIPENING MELONS (K.).—After a Melon is set and begins to swell, say from the time it is the size of a hen's egg, about fifty days are required for its full swelling and ripening—a few days more or less, according to the weather. You will be able to tell when the fruit is ready to cut by its changing in a Beechwood Melon to a mottled yellow, by its giving off a fine aroma, and by the footstalk parting. It is well, however, to cut with the stalk on, taking notice when there is a slight cracking of the footstalk; then cut it, and keep it for a day or two in the full sun.

AMARANTHUS SALICIFOLIUS CULTURE (Amateur).—It is a half-hardy annual. We consider that north of the Humber it is best grown as a tender annual, sowing it in March in a hotbed, and potting-off the seedlings in small pots when they have made two or three rough leaves; afterwards continue them in the hotbed, and shift them into larger pots as those in which they are become full of roots. In this way fine plants may be had in 7-inch pots, and in 9-inch pots handsome specimens a yard or more high. The latter are suitable for greenhouse decoration. For this purpose we grow ours in frames until the middle of June, giving them plenty of room and air.

PRIMROSE (C. B., Godalming).—We have never seen this variegation before.

PORTUGAL LAUREL FROM CUTTINGS (Julia).—Put in the cuttings of Portugal and Green Bay Laurels in August, and to the latter let there be about an inch of the wood of last year attached.

HOLLY HEDGE (Tree Guard).—In such a case, the best thing you can do is to wash the hedge occasionally with a solution of Gishurst compound, 2 ozs. to the gallon. To pick off the insects would be an endless labour.

PURPLE, BRONZE, AND GOLDEN EDGING PLANTS (Young Gardener).—We will not attempt to name all such plants, but we have found the following good:—*Ajuga reptans rubra*, dark purple leaves, 6 inches; *Perilla nankinensis*, dark purple, almost black, 18 inches; and *Dell's Crimson Beet*, dark bronzy purple, 1 foot. The last two are too tall for edgings, except in very large arrangements. The only bronze that we shall name is *Oxalis tropaeoloides*, dark bronze, 6 inches. Golden edging plants are more numerous, as *Arabis alpina variegata aurea*, 6 inches; *Coprosma Baueriana variegata*, 1 foot, but it may be kept to 6 inches by pinching; *Pyrethrum Golden Feather*, 6 inches; *Sedum Fabaria foliis variegatis*; *Thymus citridorus aureus*, 6 inches; and *Vinca elegantissima*, 6 inches, if well pegged. A purple-tipped edging plant is *Sempervivum californicum*, growing only a few inches high.

ICE PLANT CULTURE (Idem).—It is raised from seed, which may be sown early in April in rich light soil, barely covering the seed with fine soil, then water gently, and place the pots near the glass in a house or frame in a temperature of 60° to 75°. The soil should not be kept more than moist, and air must be freely admitted, otherwise the plants will damp off. Pot them off singly in 3-inch pots when they can be handled, place them in a gentle hotbed, be careful not to overwater, and shade them from bright sun for a few days until they are again established, then admit air freely, and water only to keep the plants from flagging. Harden them well off, and plant them out early in June in rich light soil, in an open warm situation, watering at planting. Any light loamy soil, with a free admixture of leaf soil or well-decayed manure, will grow them well. The shoots and leaves are used as a garnish for fruits.

FIGS MILDEWING (C. R. H.).—We think the fruit would ripen perfectly if you were to maintain a drier atmosphere, giving a gentle fire heat, which would assist the ripening and admit of freer air-giving. The laterals of Vines should be stopped at the first leaf, and this repeatedly throughout the season, stopping them at every additional leaf of growth. They may be brought closer in after the wood becomes firm and brown, but do not remove them altogether until the leaves begin to turn yellow.

IVY BORDERS.—In reference to Ivy borders, Mr. W. S. Burton, of the Inner Circle Regent's Park, says:—"Noticing your remarks upon Ivy borders, &c., in your last number to correspondents, I venture to say that, should you or any friend of yours be passing this way, having five minutes' time at their

disposal, I could show a growth of Ivy worth seeing, and I shall be happy to show it. I have, but not here, grown Ivy borders, say 9 inches in diameter, kept cut hard back, giving the idea of an immense rich green rope."

ORCHARD-HOUSE PEACHES (An Amateur).—We think the fault in your early Peaches is entirely owing to defective setting. We had a Peach house this season that, when in bloom, had scarcely three hours' sunshine. An hour's sunshine beats all our care otherwise. As to perfecting the wood of early-fruited Peach trees, it is advisable not only to give less water, but even, contrary to your idea, to give less air, in order to harden and mature the wood early; but this must be done with some judgment, for much dryness will cause the buds to drop, and too much confined heat will do the same; but, nevertheless, an early ripening of the wood from comparative dryness at the roots, and a somewhat dry and higher temperature, are the first essentials for forcing early the next season.

VINEY (A Market Gardener).—From what we can make out of the bank you refer to, and the winds which sweep over the place so mercilessly, we should decide on having a lean-to instead of a span-roofed house, with ventilation at the top and front in the usual way. If you gave us a rough plan of your ground, with a section showing the incline, &c., we might be able to advise better. Without such a guide, what we should recommend might prove quite unsuitable.

VINE LEAVES BURNED AND SCALDED (C. B.).—It is quite possible the Vines would have been better of being stopped earlier, and the laterals from the main shoots repeatedly pinched back. The size of the foliage indicates that the Vines are strong and healthy. The blotched and burned appearance of the leaves has no connection with syringing or not syringing; it chiefly arises from not giving air early enough in the morning. Sometimes, though in a more limited sense, it is owing to bad, scored, and noduled glass. In your case we should say that the evil is owing to heated, moist, enclosed air.

CONCRETE WALKS (A. R.).—We are sorry we cannot tell the proportions and preparations.

MELONS NOT SETTING (Ryde).—We should attribute their not setting to a deficiency of bottom heat and ventilation; the deficiency of the latter may cause too close and moist an atmosphere. Thin-out the principal shoots to a foot apart, and stop the laterals or secondary shoots at the first joint beyond the fruit, lining the bed, and, if need be, watering, so as not to wet the surface of the bed more than can be avoided. Admit air freely, leaving a little on at night, and impregnate the female flowers when fully expanded, choosing the early part of a fine day.

PEAS FOR AUGUST SOWING (Idem).—If you did not reside in the Isle of Wight we should say that it is too late to sow Peas, but you may sow any of the early kinds, as First and Best, Kentish Invicta, and Little Gem, the latter a very dwarf kind, which may be sown in rows 2 feet apart.

LIMING HEAVY SOIL (J. McC.).—As your land has been heavily manured for the past ten years, it will be much benefited by liming in March; draw the lime on to the land in dry weather, place it in small heaps, and cover it with soil. When it falls, but whilst it is quick, strew it over the ground, and as soon afterwards as convenient dig it in. Ten tons per acre will not be too much for your heavy clay soil.

FRUITING ONE VINE IN TWO HOUSES (Hamburgh).—It is best to grow the Vine with all its branches in one house, so that the Grapes may ripen at one time. You may, however, take a rod into the cool house, and as a result of the lower temperature the Grapes will ripen at a later period than those in the warmer house. We are not prepared to say what the ultimate effect will be on the Vine, but we think such a mode of proceeding will interfere with the season of rest, and be injurious to the well-doing of the Vine. If we were to try the proposed plan we should take a cane from near the root of the Vine, and introduce it into the second house, without allowing foliage or Grapes to be produced in the warm house, and in this case we do not think any injurious effect would be produced. Should you try it we shall be glad to know the result.

TRAINING VINES OUT OF DOORS (Glewin).—Leave the upright rods 15 to 18 inches apart.

VINES SCALDED (A Seven-years Subscriber).—Your Vines that have lost the principal leaves from scalding will have the eyes to which they belonged imperfectly developed, and not improbably they will not fruit well next season. Keep the laterals well stopped to one leaf of each successive growth, and we think you will have a good growth if not a fair crop of fruit, providing you secure the thorough ripening of the wood.

SOWING EUCALYPTUS AND WELLINGTONIA SEEDS (Idem).—The seeds are best sown in spring; those of the *Eucalyptus* in a hotbed, and those of the *Wellingtonia* in a pan placed in a cold frame, keeping close and just moist until the plants appear, then admit air freely. In autumn prick-off an inch apart in store pots or pans, and winter in a cold house or frame; in spring plant-out in nursery lines 6 inches apart, and the plants 3 inches apart in the rows. In two years double the distance, and after two years they will be fit to plant-out finally. The *Eucalyptuses* should be potted-off singly when they show the second leaves, be returned to the hotbed, and be removed to a greenhouse after they have become well established.

SEEDS (James Smith).—No. 1, *Abrus precatorius*; 2, *Andropogon cernuus*.

NAMES OF PLANTS (A Subscriber).—1, *Trifolium stellatum*; 2, *Malva sylvestris*; 4, *Centauria Cyanus*; 5, *Shrivelled up*; 6, *Calluna vulgaris*; 7, *Polygonum Convolvulus*. (P. H., Gardener).—*Spiraea arifolia*. (H.).—We cannot name such small pieces of plants. (*John S.*).—*Verbascum floccosum*; *Menispermum canadense*; *Polygonum Persicaria*. (G. S.).—1, *Solidago gracilis* Poit (?); 2, *Veronica longifolia*; 3, *Epilobium angustifolium*; 4, *Geranium pratense*; 5, *Orobanchia alba*; 6, *Campanula rapunculoides*.

POULTRY, BEE, AND PIGEON CHRONICLE.

LAVENDER POISON TO FOWLS.

I HAVE lately lost two valuable Light Brahma cocks in a very singular way. In preparing a garden next door for a new tenant two large lavender trees were taken up, and put into my fowl yard for the purpose of being burnt; in this yard were twenty Light Brahma hens and one cock. On my visiting the yard shortly afterwards I found the cock dead, and several of the hens looking badly. The birds were at once removed, and the trees

HAMBURGERS.—*Golden-pencilled*.—1 and 2, J. Robinson. *Silver-pencilled*.—1, J. Robinson. 2, H. & A. Gill, Rawtenstall. *Golden-spangled*.—1, G. & J. Duckworth. 2, J. Robinson. *Silver-spangled*.—1, G. & J. Duckworth. *Black*.—1, H. Hoyle, New Church, Rossendale.
BANTAMS (Except Game).—1, R. Pickles, Great Hey, Edenfield. 2, Furness and Studol, Rawtenstall.
GAME BANTAMS.—1, T. Sharpley, Forest Bank, Rawtenstall. 2, W. F. Addie, Preston.
POLANDS.—1, T. Wakefield, Golborne. 2, J. Partington, Bradshaw Leach.
HOUDANS.—1 and 2, G. W. Hibbert, Godley Hyde, Cheshire.
GEES.—1, R. Leech. 2, J. Houliker, Revidge, Blackburn.
DUCKS.—*Aylesbury*.—1, E. Leech. 2, J. Robinson. *Rouen*.—1 and 2, T. Wakefield. *Any other Variety*.—1, C. W. Brierley. 2 and *hc*, W. Binns, Pudsey (Ruddy Shields and Bahamas).
TURKEYS.—1, E. Leech. 2, J. Houliker.

PIGEONS.

POUTER.—*Cock*.—1 and 2, T. Waddington. *hc*, W. Kitchen, Feniscowles.
Hen.—1 and *hc*, T. Waddington. 2, W. Kitchen.
CARRIER.—*Cock*.—1 and 2, J. Stanley, Blackburn. *hc*, J. Stanley, Blackburn; T. Waddington. *Hen*.—1 and 2, J. Stanley. *hc*, T. Waddington.
TUMBLERS.—*Almond*.—1 and 2, T. Waddington. *Any other Variety*.—1, T. Charney, Blackburn. 2, T. Waddington.
BALDS OR BEARDS.—1, T. Waddington. 2, J. B. Bowdon.
OWLS.—1, T. Waddington. 2, J. Stanley. *hc*, W. Kitchen.
BARBS.—1, T. Waddington. 2, W. Kitchen.
DRAGOONS.—1, T. Charley. 2, W. Sefton. *hc*, W. Sefton (2); T. Waddington.
TRUMPETERS.—1 and 2, W. Kitchen. *hc*, C. Norman, Westerfield, Ipswich.
TURBITS.—1 and 2, W. Kitchen. *hc*, W. Kitchen; T. Waddington.
JACOUBINS.—1, W. Kitchen. 2, T. Waddington.
ANTWERPS.—1, J. Stanley. 2, A. Justice, Salford, Manchester. *hc*, F. Woodcote, Blackburn (2); J. Stanley (2).
FANTAILS.—1, J. F. Loversidge, Newark. 2, W. Kitchen.
MAGPIES.—1 and 2, W. Kitchen. *c*, J. B. Bowdon.
ANY OTHER VARIETY.—1 and 2, W. Kitchen. *c*, T. Waddington.
SELLING CLASS.—1, T. Williams (Dragoons). 2, T. Waddington. *c*, J. B. Bowdon; T. Williams (Red Turbits).

JUDGES.—*Poultry*: Mr. R. Teebay, Preston. *Pigeons*: Mr. E. Hutton, Pudsey.

BRAMLEY POULTRY SHOW.

THE first Exhibition of the Bramley Society was held on July 22nd and 23rd in a spacious field in the centre of the town. Considering that it was the first essay, the arrangements were well carried out, and we did not hear of a single mistake. The poultry and Pigeons were shown in a roomy circular tent, and Turner's pens being used, the general appearance was good. The entries, though good, were not such as they would have been had it not been imperative that all birds should be delivered at too early an hour for them to travel any great distance; besides which there was the concurrence of other shows of longer standing.

Spanish were first on the list, there being only three pens of ordinary quality. *Cochins* came next, *Buffs* being first and *Partridge* second. *Brahmas* were of fair quality as a class, but some of the birds would have been all the better of a bath. In *Red Game* fowls both winners were Brown Reds, the first-prize pen being in capital feather. *Duckwings* were the best of the Game classes, and the second-prize cock was of good quality. The single Game cocks were a poor lot. In *Polish*, *Silvers* were first and *White-crested Blacks* second. The *Hamburgs*, though not numerous, were very good in all the classes, and *Bantams* were also good; the first-prize *Reds* took the first extra prize, and the second extra was awarded to a pen of good *Blacks*.

In *Ducks*, the first were *Aylesbury* and the second *Rouen*; in the Variety class the first were *Bahamas* and the second *Ruddy Shields*.

There was also a class for chickens or ducklings, in which the winners were *Brahmas* and *Spanish* respectively; and in the Variety class for fowls, *Houdans* were first and *Dorkings* second.

Pigeons were better supported than poultry, and the quality throughout was good. In the Carrier class the winners were both *Black* cocks, good in beak, eye-wattle, and style. In *Pouters*, the first was *Blue*, the second *White*. *Dragoons* were all *Blues*, and good in quality and condition, and the same may be said of the *Owls*. The first-prize pair of *Turbits* were *Blue*, and good in all points, the second *Reds*. Of *Jacobins*, both the prize pairs were *Red*, and very good; those which were first were very short and neat in head. Both the awards in *Trumpeters* were made to *Black Mottles*, which were very good. Of *Long-faced Tumblers*, the first were *Black* and the second *Red Mottles*; and in the *Short-faces* the first were *Almonds* and the second *Black Mottles*. *Fantails* were poor, but the *Barbs* were a very good class, *Blacks* being first and *Duns* second. Both the *Long-faced* and single *Antwerps* were very good, but the *Short-faces* fell far short of what is required of that variety, and we thought the second-prize birds two cocks, although we are open to correction. In the Variety class the first were capital foreign *Owls*, and the second *Black Brunswicks*.

There were some good *Rabbits*, particularly the *Grey-and-white* doe shown by Mr. Johnson, and several *Himalayan* and *Dutch* specimens.

SPANISH.—1, J. Thresh, Bradford. 2, W. & F. Pickard, Thorne.
COCHIN CHINA.—1, H. C. & J. W. Mason, Drighlington. 2, H. Beldon, Goitstock, Bingley.
BAHAMA POUTERS.—1, H. Beldon. 2, J. B. Britton, Leeds Pottery.
GAME.—*Red*.—1, J. W. Thornton, Bradford. 2, E. Ackroyd, Eccleshill.
Game.—*Any Variety*.—1 and 2, W. Fell, Adwalton. *Cock*.—1, J. W. Thornton. 2, Milnes, Armley.
POLISH.—1 and 2, H. Beldon.

HAMBURGERS.—*Silver-spangled*.—1, H. Beldon. 2, T. Fawcett, Baildon. *Golden-pencilled*.—1 and 2, H. Beldon. *Silver-pencilled*.—1 and 2, H. Beldon. *Black*.—1, H. Beldon. 2, J. Roberts, Bramley.
BANTAMS.—*Game*.—1 and 2, W. F. Entwistle, Scholes, Wyke. *Black or White*.—1, H. Beldon. 2, R. H. Ashton, Manchester. *Any other variety*.—1, E. Beldon.

ANY OTHER VARIETY.—1, H. F. East, Swanssea. 2, W. & F. Pickard.
CHICKENS OR DUCKLINGS.—1, H. Beldon. 2, W. & F. Pickard.
DUCKS.—*Rouen or Aylesbury*.—1, J. B. Britton. 2, G. Wood, Stanningley. *Any variety*.—1 and 2, W. Binns, Pudsey.
SELLING CLASS.—1, J. Powell. 2, J. Tidswell.

PIGEONS.

CARRIER.—1, F. Horner, Harewood. 2, J. Hawley, Bradford.
POUTER.—1, J. Hawley. 2, E. Horner.
DRAGOONS.—1, E. Horner. 2, H. Turner.
OWLS (English).—1, J. Hawley. 2, J. Thresh, Bradford.
TURBITS.—1, H. G. Poole, Bradford. 2, W. Lund, Shipley.
JACOUBINS.—1, W. Binns. 2, E. Horner.
TRUMPETERS.—1 and 2, E. Horner.
TUMBLERS.—*Long-faced*.—1, D. Riddiough, Bradford. *Short-faced*.—1, W. R. Pratt, Oxford. 2, E. Horner.
FANTAILS.—1 and 2, E. Horner.
BARBS.—1, J. Hawley. 2, E. Horner.
ANTWERPS.—*Long-faced*.—1, D. Riddiough. 2, W. Lund, Shipley. *Short-faced*.—1, D. Riddiough. 2, J. Hawley. *Cock*.—1, H. Turner. 2, W. Lund.
SWALLOWS OR MAGPIES.—1 and 2, E. Horner.
ANY OTHER VARIETY.—1, E. Horner. 2, H. G. Poole, Bradford.
SELLING CLASS.—1, Popplewell Bros., Bramley. 2, E. Horner.

RABBITS.—*English*.—1, A. Walker, Waterslacks, Bramley. 2, A. Thackray, Bramley. *Any variety*.—1, W. G. Johnson, Kettering. 2, H. Cawood, Thorne.
JUDGES.—Mr. W. Cannon, Bradford, and Mr. H. W. Illingworth, Idle.

LISKEARD POULTRY SHOW.

(From a Correspondent.)

THE fourth annual Show of poultry in connection with a horticultural exhibition was held at Liskeard on the 25th ult., and proved a great success in the number and quality of the entries, and the attendance of visitors. Messrs. Golding and Herring made the awards.

Game were good but out of feather. *Hennies* were a good class, all were commended. *Dorkings* were the best ever exhibited at this Show. *Spanish* were poor, *Malays* not very good, neither were *Cochins*, except the winning pens. *Brahmas* were very poor, and so were the classes of *Polands*. *Hamburgs* and *Bantams* were good, notably the pen of Sebrigh's *Bantams* in the Variety class. *Ducks* were excellent.

Pigeons were few but good.

GAME.—1, J. Jekin, Eltham. 2, F. Burton, Truro.
HENNISS.—1 and *c*, J. Harris, Liskeard. 2, W. Crago, Duloe. *hc*, J. Crabbe, Liskeard.

DORKINGS.—1 and *c*, E. Burton. 2, C. H. White. *hc*, W. R. Roebuck.
SPANISH.—1, S. R. Harriss. 2, F. Brewer. *c*, Miss Avery, Liskeard.
MALAY OR INDIAN GAME.—1, J. Bone, Liskeard. 2, C. Sargent, Liskeard.
hc, J. N. Jasper, Conda's Green, Launceston.

COCHIN-CHINA.—1, S. R. Harriss, Cusgarne, St. Day. 2, S. Brewer, Lostwithiel.
hc, Mrs. A. G. Marshall, Liskeard.

BRAHMAS.—1 and 2, E. Burton.
POLANDS.—*White Crested Black*.—1, Miss F. Solomon, St. Blazey. *Golden or Silver*.—1, W. Probert, Lostwithiel (Silver). 2, F. Brewer (Silver).

HAMBURGERS.—*Golden or Silver-spangled*.—1, Miss M. J. Marshall, Cusgarne. 2, S. R. Harriss. *hc*, W. J. Bate, St. Cleer. *c*, W. May, Liskeard. *Golden or Silver-pencilled*.—1, S. R. Harriss. 2, S. Richards, Truro. *hc*, R. Loram, Exeter.
GAME BANTAMS.—1 and 2, J. Pearson, Liskeard. *hc*, T. D. Wills, Wadebridge.

BANTAMS.—1, Rev. G. F. Hodson, North Petherton. 2, W. Baskerville, Launceston. *hc*, W. Willis.

SELLING CLASS.—1, E. Burton (Coloured Dorkings). 2, S. R. Harriss (Golden-pencilled *Hamburg*).

GUINEA FOWLS.—1, J. Borrow, Trelethick. 2, Withheld.
DUCKS.—*Aylesbury*.—1, S. R. Harriss. 2, J. H. Hoit, St. Austell. *hc*, T. H. Waterman, Anderton, Devonport; J. H. Hoit. *Any other variety*.—1, W. H. Compstone, Lostwithiel (Black East Indian). 2, T. D. Wills (Decoy). Extra 2, J. Henwood, Liskeard.

TURKEYS.—1, C. M. Oliver, Liskeard. 2, J. Borrow.

PIGEONS.

CARRIERS.—1, H. Yardley, Birmingham. 2 and *hc*, E. Burton.
POUTERS.—1, H. Yardley. 2, J. Croote, Heavitree, Exeter.
TUMBLERS.—1, E. Burton. 2, H. Yardley.
FANTAILS.—1, H. Yardley. 2, K. Courtney, Liskeard.
TURBITS.—1, J. Croote. 2, H. Yardley.
COMMON.—1, E. Burton (Runts). 2, H. Denham, Exeter (Archangel). *hc*, W. Mudge, Blagdon, Paignton (White Trumpeters); J. Williams, Liskeard.

CAGE BIRDS.

NORWICH.—*Clear Yellow*.—1, S. Elliott, Liskeard. 2, H. Gibbs. *Buff*.—1 and 2, S. Elliott.

BELGIANS.—1, Withheld. 2, H. Gibbs.
LEZARDS.—1, S. Elliott. 2, E. Sargent, Liskeard. *c*, H. Gibbs.

CINNAMONS.—1, S. Elliott. 2, E. Sargent.
MULES.—1, S. Elliott. 2, B. Stephens, Tideford.

AVIARY OF SIX CANARIES.—1, S. Elliott. 2, E. Sargent.
FOREIGN.—1, W. Vesper, Liskeard. 2, S. Elliott.

GOLDFINCH.—1, C. Sargent, Liskeard. 2, E. Sargent.
BULLFINCH.—1, Withheld. 2, E. Sargent.

SEVILARS.—1, J. Harris.
LINNET (Any variety).—1, E. Sargent. 2, C. Sargent.

THRUSH.—1, H. Decker, Liskeard. 2, C. White, Liskeard.
BLACKBIRD.—1, J. Pooley, Liskeard. 2, G. Pooley, Liskeard.

ENGLISH (Any variety).—1, E. Sargent (Bramble Finch).

TONG AND DUDLEY HILL POULTRY SHOW.

THIS Show took place on July 27th in the cricket field at Dudley Hill, near Bradford. The day was very hot, but the poultry, being in a shady position, did not suffer. The entries were not numerous, but there were many excellent pens and single birds, notably the pullet in the first-prize pen of *Spanish*,

the first-prize Grey Dorkings, the whole of the Hamburgs, and the winning Game Bantams.

In *Game* the first in Reds were Brown Reds, very true to colour, and sound in flesh and feather. Among the Duckings, first came a pair very good in colour. In single cocks of any variety the first was a very good Black-breasted Red, in excellent plumage but rather short-headed, and the second a Golden Poland.

The *Pigeons* formed the most attractive feature of this section of the Show, and though the classes were not numerous nor the prizes of much value, yet the entries were good; and a regulation that where there were ten entries a third prize should be awarded, gave great satisfaction to the exhibitors. The pens used were on Turner's principle, and showed the birds to great advantage.

Common Pigeons stood first on the list, only three pairs out of eleven being what are required, the rest being very bad Antwerps. The first-prize pair were nearly perfect. Turbits were a show in themselves, and perhaps it would be difficult to bring three pairs of more perfect birds together than those which took the prizes. The first-prize birds were Blue, the second Red, and the third Blue. Tumblers were of fair quality, the first-prize pair of Wholefeathers being very good in head, beak, and eye. The second were Almonds. The Jacobins were good and all Red; the first-prize pair were uncommonly short and neat in head. There were but two pairs each of Fantails and Pouters. The latter were, however, of high quality. In Antwerps the first prize went to Short-faced Silver Duns, and the second to Long-faced Red Chequers; and all the birds in the class were full of character, but many pairs were badly matched. Nuns were moderate in quality, and several pairs were dirty. Owls were very good; the first-prize birds were Blue English, and the second foreign White. The Variety class contained many pens of the standard kinds. The first prize went to good Dun Carriers, the second to Black Barbs, and the third to as handsome a pen of Blue Dragoons as we have seen for some time.

As this section of the Show is so popular we should strongly recommend a revision of the Pigeon list, as well as an augmentation of the prizes in both poultry and Pigeons, feeling confident that no part of the Show will prove so remunerative now that the Society is so well established.

SPANISH.—1, Powell, Bradford. 2, J. Thresh, Bradford.
DORKINGS.—1, H. Beldon, Bingley. 2, W. Melton, Bowling.
COCHIN-CHINA.—1, W. Mitchell, Birkenshaw. 2, H. Beldon. *hc*, H. Frith.
GAME.—Black-breasted or other Red.—1, J. Thornton, Bradford. 2, W. Fell, Drighlington. *hc*, R. Hemmingway, Shelf. *Duckings or other Grey or Blue*.—1 and 2, W. Fell.
SINGLE HEN (Any breed).—1, H. Beldon (White Pile Game). 2, J. Powell. *hc*, I. Turner, Drighlington (White Pile Game); W. Fell (White Pile Game); J. Thresh.
HAMBURG.—Golden-spangled.—1 and 2, H. Beldon. *Silver-spangled*.—1 and 2, H. Beldon. *Golden-pencilled*.—1 and 2, H. Beldon. *Silver-pencilled*.—1 and 2, H. Beldon.
POLISH.—1 and 2, H. Beldon.
BRAMA POOTRA.—1, H. Beldon. 2, W. B. Gooder, Horton Green.
GAME BANTAMS.—1 and 2, G. Noble, Staincliffe. *hc*, A. Smith, Halifax.
BANTAMS (Any other variety).—1, H. Beldon. 2, J. Waddington, Guisley.
SINGLE COCK (Any breed).—1, R. Hemmingway. 2, H. Beldon. *hc*, J. Thornton, Bradford.
ANY VARIETY.—1, C. Driver, Dudley Hill. 2, H. Frith.
TURKEYS.—1, M. Greenhough, Dudley Hill.
GESE.—1, J. Ward, Drighlington.
DUCKS.—*Aylesbury*.—2, C. Greenhough. *Rouen*.—1, G. Wood, Stanningley. 2, J. Ward.

PIGEONS.

COMMON.—1, W. Lund, Shipley; W. Binns, Pudsey. 3, Clayton & Bastow, Gillingham.
TURBITS.—1, H. G. Boole, Bradford. 2 and *hc*, Clayton & Bastow. 3, W. Binns.
TUMBLERS.—1 and 2, G. Cresswell, Edgerton. *hc*, Clayton & Bastow. *c*, W. Binns.
JACOBINS.—2, G. Cresswell. *hc*, G. Barton, Beeston; J. E. Mason, Bradford.
FANTAILS.—1, J. Hawley, Gillingham. 2, Clayton & Bastow.
CROPPERS OR POUTERS.—1, J. Hawley. 2, Clayton & Bastow.
ANTWERPS.—1, J. Hawley. 2, W. Lund. *hc*, T. Shoemith; S. Moore, Great Horton; Clayton & Bastow; W. Binns.
NUNS.—1, W. Lund. 2, J. Coates. *hc*, G. Cresswell.
OWLS.—1, J. Annakin, Drighlington. 2, J. E. Mason, Bradford. *hc*, J. Thresh; F. Mark.
ANY OTHER VARIETY.—1, J. E. Mason. 2, G. Cresswell. 3, Clayton & Bastow. *hc*, J. E. Crofts; W. Lund; J. Thresh; F. Mark; W. Binns (3); G. Cresswell.

RABBITS.—*Spanish*.—1, W. Rudd, Bradford. 2, E. Smith, Bradford. *hc*, S. Ball, Bradford. *Common*.—1, Clayton & Bastow. *Any other Variety*.—1, S. Ball. 3, Clayton & Bastow. *hc*, Miss Beldon, Bingley (2); R. Brownbridge, Junr.; G. Barton, Beeston.
CATS (Any colour).—*Male*.—1, J. H. Holmes. 2, H. A. Frith. *Female*.—1, Mrs. C. B. Murgatroyd, Bowling (White Angora). 2, A. W. Goodison.

The Judges were Messrs. J. Dixon and E. Hutton.

CLECKHEATON POULTRY SHOW.

The fourth annual Show of the Cleckheaton Agricultural and Horticultural Society took place on the 20th of July. The following awards were made in the poultry and Pigeon department:—

GAME.—Black Red or Brown Red.—1, C. W. Brierley, Middleton. 2, J. W. Thornton, Bradford. *hc*, J. Hodson, Bowling. *Duckings, Blue or Grey*.—1, Miss Aykroyd, Eccleshill. 2, W. Fell, Adwalton. *Any Variety*.—1, C. W. Brierley. 2 and *hc*, R. Walker, Gomersal. *Cock*.—1, C. W. Brierley. 2, J. W. Thornton, Bradford. *hc*, W. Sugden, Rastrick.
BORING.—1, H. Beldon, Bingley. 2, E. Leach, Rochdale. *hc*, W. H. King, Rochdale.
COCHIN-CHINA.—1, C. W. Brierley, 2, A. Bamford, Middleton. *hc*, H. Lacy, Hebdon Bridge.

SPANISH.—Black.—1, H. Beldon. 2, J. Powell, Bradford. *hc*, J. Thresh Bradford; W. Brierley.
BRAMA POOTRA.—1, H. Lacy. 2, W. Schofield, Bradford. *hc*, E. Leach.
HAMBURG.—Gold or Silver-pencilled.—1 and 2, H. Beldon. *hc*, S. Smith, Northwram. *Gold or Silver-spangled*.—1 and 2, H. Beldon. *hc*, J. Newton, Silsden.
PIREASANT.—Black.—1, J. Moore, Bingley. 2, H. Beldon.
GAME BANTAMS.—Black Reds or Brown Reds.—1, W. F. Entwistle, Wyke, Bradford. 2, G. Noble, Staincliffe. *hc*, W. F. Entwistle; S. Smith, Northwram. *Any variety*.—1 and 2, W. F. Entwistle. *Any variety except Game*.—1, H. Beldon. 2 and *hc*, R. H. Ashton, Mottram.
ANY OTHER VARIETY.—1 and 2, H. Beldon. *hc*, H. F. East, Swansea.
SELLING CLASS.—1, J. Powell, Bradford. 2, S. Buckley, Ending Healey. *hc*, H. Smith, Hyde.
TURKEYS.—1, E. Leach.
GESE.—1, E. Leach. 2, J. White, Whitley.
DUCK.—*Aylesbury*.—1, F. Leach. 2, Capt. Openshaw, Cleckheaton. *Rouen*.—1, J. Newton, Silsden. 2, E. Leach. *hc*, J. White. *Any other Variety*.—1 and 2, W. Binns, Pudsey.
EXTRA STOCK.—*Game, Brahma Pootra, or Dorking Chickens*.—1, R. Hemmingway, Shelf. 2, C. Carr, Wilsden. *hc*, W. Sugden, Rastrick; H. Jennings, Allerton; H. F. East, Swansea.

PIGEONS.

CARRIERS.—1 and 2, F. Horner, Harewood. *Single Bird*.—1 and 2, E. Horner. *hc*, J. Hawley, Gillingham.
GRABBERS.—1, E. Horner. 2, J. Hawley. *hc*, H. Yardley, Birmingham; J. Hawley.
POUTERS OR CROPPERS.—1, J. Hawley. 2, E. Horner. *hc*, H. Yardley; E. Horner.
FANTAILS.—1, J. F. Loversidge, Newark. 2, E. Horner. *hc*, J. Walker, Newark.
DRAGOONS.—1, E. Horner. 2, H. Yardley. 3, R. Schofield, Cleckheaton. *hc*, F. Gables, Birkenhead.
JACOBINS.—1, Hinchcliffe & Holt, Bradford. 2, J. Hawley. *hc*, W. Binns, Pudsey.
NUNS.—1, A. J. Seller, Malton. 2, W. Lund, Shipley.
ANTWERPS.—1, H. Jennings, Allerton. 2, J. W. Collinson, Halifax. *hc*, W. F. Entwistle; W. Lund; H. Jennings.
SELLING CLASS.—1, C. Airlon, junr., York. 2, J. E. Mason, Clayton. *hc*, E. Horner.

RABBITS.—*Lop-eared*.—1 and *hc*, T. C. H. Lord, Huddersfield. 2, G. Johnson, Kettering. *Extra Prizes*.—*Any Variety except Lop-eared*.—1, C. Airlon, junr. 2, R. H. Grew, Wakefield. *hc*, F. Watts, Cleckheaton; T. C. & H. Lord; C. Airlon, junr.

JUDGES.—*Poultry*: Mr. Richard Teebay, Fulwood, Preston; and Mr. James Dixon, Bradford.

APIARIAN NOTES.

I SHOULD like to know what account would be given by the various apiarian readers of "our Journal" of the present honey season. In many respects it has hitherto been almost a repetition of last year's experiences, although the character of the year itself has been quite singular and entirely different from the year 1871. Last summer we had a great deal of gloomy weather, little electricity, and a continual dropping, without any great actual rainfall. This summer has been marked by great and striking alternations of heat and cold, with violent, almost periodic thunderstorms, and tremendous rains. The summer itself came late, following upon severe frosts quite down to the close of June. Almost everywhere in the south-west of England, and I believe in many other parts of the country, the blossoms of fruit trees great and small have been very generally destroyed. Hence many hives of bees died of starvation as late as May, and this, as in my own case, in a country abounding in orchards, which were in full bloom at the time. The cold weather and the frosts combined to rob us of the large honey harvest which we confidently expected from the experience of all former years. Out of nineteen hives with which I closed last year's bee operations, only seven survived till June this year. Such mortality, after more liberal feeding than at any previous period in my long experience as a bee-keeper, was utterly unexpected and most disheartening.

Then began, but not till near the middle of June, with the fitful weather changes of this remarkable summer, a repetition of last year's persistent swarming. No amount of additional room in supers, large and small, even where the bees took to them and constructed comb, availed to check this propensity. As last year, so this, even before their own stock-box was filled with comb, the bees preferred to swarm. Last year when this occurred I accounted for it by supposing that the old queen had died, and that the swarm which issued was led off by one of the young queens, who are less unwilling naturally to quit their homes than the queen mothers are. But no such account of the phenomenon could be given this year. I find that the same tendency to swarm prevails this year in Cornwall, and that the swarming has taken place quite late in July. But here, owing to the quantity of heather of many kinds and other late-blooming wild flowers which abound, there is every prospect of a splendid honey harvest. Not so in Somersetshire, I fear, where our last chance of honey in the prevailing white clover was fast disappearing before the scythe of the mower.

Everyone knows that swarming depends as much on the weather as on any other cause. If the bees have plenty of room, and honey abounds during a long course of fine weather, the inconvenience of a crowded dwelling is only felt during the brief hours of night. With the sunrise the inconvenience ceases. Hence a chief motive to swarming is removed; the more so as the space devoted to breeding is diminished by the want of storing room for honey. At such times we have seen a

queen, after searching in vain for empty cells, and depositing two or three eggs in such as she could find, at last stand in despair on the edge of a comb and drop her eggs at random, which the bees devoured as fast as she laid them. In wet and cold, or gloomy weather the case is very different. The cells are generally empty, and the queen with her enormous powers of laying has unlimited scope; every available cell in super and stock is occupied. Hence in due time proceeds a vast addition to the population, so that the hive becomes most inconveniently crowded. Preparation is therefore made simultaneously for the raising of young queens. Then comes a day cloudless and serene, one of the six fine days we get in an average English summer; everything invites, nay urges, to departure, and off they go. Sometimes, as in the cases before alluded to, where no such excess of population exists, it would seem as if conscious poverty urged the bees to depart, in the hope of bettering their fortunes elsewhere.

Be it as it may, fitful and unproductive summers are favourable to much swarming. Thus far the years of 1871 and 1872 have resembled one another, only this year has been with me the worst of the two—nay, the worst of any of the fifteen years preceding; for it was not till the middle of July that I could detect in any of my hives, then numbering fifteen, a single sealed cell of honeycomb, although two at least of my hives had not swarmed.—B. & W.

OUR LETTER BOX.

MARCH PULLETS LAYING (*Croydonia*).—We answer "yes" to your first question. It is perfectly possible for pullets to lay at the same time, as we have had it happen to ourselves to have a Cocker pullet sixteen weeks old lay regularly. We do not know of any breed that hatches at the end of eighteen days, nor does such a thing ever happen to us, although we keep all breeds.

MATING DORKINGS (*B. T. C.*).—You may leave them together till the end of October if you do not hatch till March. If you wish to breed earlier you must separate earlier. As a rule, all breeding birds, if they are to breed early, should be put together not later than the end of October.

DARK GREY DORKINGS BECOMING LIGHTER (*Idem*).—It is the tendency of all dark birds to get lighter, but you will always be subject in Dorkings to varieties of shades of colour. You must not condemn the cock. A Silver-Grey cock that is the proper partner for light Silver-Grey hens must have a faultless black breast.

FEATHER-EATING FOWLS (*M. D. F.*).—The Spanish fowls are eating each other's feathers. They will do so sometimes as the season gets late and the plumage gets worn out. It is seldom general in a pen or on a run, but all the mischief is done by one or two unnatural birds. Watch and remove them. Rub still with compound sulphur ointment, and feed, if you can, every day on seeded lettuces. It is only now they will do it, and if you can moult them well off you will be safe from such annoyances for a long time. Watch for the offenders, moult them in any small space, and, when in full plumage they may be safely put among their fellows.

EXHIBITING A HEN IN TWO CLASSES (*W. S.*).—We think the judge was fully justified in what he did. One hen cannot do duty in two classes. She is evidently a good bird, and you should have been content with showing her in one class. Her absence from either class might stultify the judge's decisions.

PRODUCING BANTAMS (*Breeder*).—Having made up your mind what breed you wish to introduce into the Bantam classes, choose the smallest male you can find, having the attributes of the breed most strongly developed; put him to a large Bantam hen approaching as nearly as possible to himself in shape and colour, and guiltless of points that would disqualify the progeny in the father's class. If your space permit, and you are willing to take the trouble, reverse the above, take the smallest hen of the breed you wish to make, and the largest Bantam cock of proper colour, &c. The next year you will have to choose your smallest birds, but those most promising in points and character, and you must put them together. You will also put the original father with his daughters, and mother with her sons. This will give you such birds that by judicious selection for breeding you will have a breed. All such require re-pairing and strengthening now and then.

DUCKINGS DYING (*E. H.*).—Your poultry have access to something that is very injurious and fatal. You must find out what it is. There are certain waters that cause paralysis in young Ducks. Some springs do it. We should attribute your loss to that, but for the fowls being attacked. Are the ducklings shut in a house at night, and if so, what is the flooring?

DUCKS' LEGS PARALYSED (*Newcastle*).—We are inclined to think that in your case the evil arises from the coldness of the water. See what is said in answer to another correspondent.

BEES IN SMALL HIVES—SUPERFLUOUS SWARMS (*R. W.*).—You had better give your two improved cottage hives ekes of 4 or 5 inches in depth at once. The swarm may be able to carry down the combs this season. Keep the best of the old stocks for a swarm next spring. To this you may also give an eke either now or early in the spring. It is, in case of an unusual mortality during winter, best to have a good stock or two capable of affording a swarm to supply deficiencies. It is hardly likely that your second swarms will both be sufficiently well stored to stand the winter. You must inspect them at the end of September, and decide whether to keep or break up. You can drive out the bees of the stocks that are doomed and unite them to any of your other stocks, or to your second swarms, if deemed advisable to attempt to keep them; and if these last are also to be sacrificed, their bees can be added to any others. If the second swarms are not sufficiently advanced to be retained, you can carefully wrap them up and shake swarms into them next year, to the great assistance of the bees and your own profit.

SELLING PRICE OF HONEY AND WAX (*K.*).—Most bee-keepers are glad to get 1s. 6d. per lb. for the best honey in the comb, and from 1s. 6d. to 2s. per lb. for wax. The prices of both, however, vary with the locality.

TRANSMITTING BEES TO A DISTANCE (*H. S.*).—Bees bear travelling well at any time of the year when they are not breeding; therefore swarms travel

well at any time, or bees transferred to empty hives, or to hives with substantial comb in them. In this case they must have sufficient food for the journey they have to take; otherwise the best times for bees to travel are in September, and from November to April. We have sent many hives long distances with the most perfect safety in autumn, and in spring as late as the middle of April.

METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	A.M.		IN THE DAY.						
			Hygrometer.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Temperature.		Rain.
	Barometric Pressure and Sea Level.	Level.	Dry.	Wet.			Max.	Min.	
1872.									
July									
We 21	30.87	7.5	68.1	68.1	S.W.	68.1	68.1	68.1	—
Th 22	30.87	7.5	68.1	68.1	S.W.	68.1	68.1	68.1	0.130
Fri 23	30.87	7.5	68.1	68.1	S.W.	68.1	68.1	68.1	0.362
Sat 24	30.87	7.5	68.1	68.1	S.W.	68.1	68.1	68.1	—
Sun 25	30.87	7.5	68.1	68.1	S.W.	68.1	68.1	68.1	—
Mon 26	30.87	7.5	68.1	68.1	S.W.	68.1	68.1	68.1	0.100
Tu 27	30.87	7.5	68.1	68.1	S.W.	68.1	68.1	68.1	—
Wed 28	30.87	7.5	68.1	68.1	S.W.	68.1	68.1	68.1	—
Th 29	30.87	7.5	68.1	68.1	S.W.	68.1	68.1	68.1	—
Fri 30	30.87	7.5	68.1	68.1	S.W.	68.1	68.1	68.1	—
Sat 31	30.87	7.5	68.1	68.1	S.W.	68.1	68.1	68.1	—

REMARKS.

24th.—Fine all the early part of the day, but stormlike, with lightning in the evening and night.

25th.—Intensely hot during past night, and very hot out fine till 7 P.M., when it became very loud and near, with vivid lightning till 7.23, lightning almost incessant from 8.40 to 9.10. Thermometer 89° in the bedroom at midnight.

26th.—Fine, but still very hot, rain commencing about 10 P.M., and continuing more or less till midnight; the hottest night for at least fifteen years.

27th.—Fair and bright throughout, but not quite so warm, and much cooler at night.

28th.—Fine morning, sun hot, but tempered by a breeze, very slight shower between 8 and 9 P.M., dark and cloudy at night.

29th.—A lovely morning, bright yet cool, and so continued till about 5 P.M., when it clouded over and rain fell at 5 P.M.

30th.—Fine day, though thunder was very frequently heard at a distance, and a little rain fell, but not enough to be measurable.

A hot week, especially the first three days. The temperature on the 25th (92.3°) has only been exceeded during fifteen years on the following dates:—1853, June 16th, 92.6°; 1863, July 21st, 93.3°; 1863, July 22nd, 93.2°.—G. J. SYMONS.

COVENT GARDEN MARKET.—JULY 31.

SUPPLY short, especially in soft fruit. Business is steady, and prices a little higher. A fresh consignment of West Indian Pines has arrived in fair condition, and continental supplies are well kept up, comprising Green Gage and other Plums, also Currants. Potatoes rule heavy, and large quantities are on hand.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	4	0	0	0	Mulberries.....	1	0	0	0
Apricots.....	2	0	0	0	Nectarines.....	6	0	0	0
Cherries.....	1	0	0	0	Oranges.....	8	0	0	0
Christians.....	0	0	0	0	Peaches.....	8	0	0	0
Currants.....	5	0	0	0	Pears, kitchen.....	0	0	0	0
Black.....	5	0	0	0	Pears, dessert.....	0	0	0	0
Red.....	4	0	0	0	Pine Apples.....	1	0	0	0
Elberta.....	1	0	0	0	Plums.....	5	0	0	0
Colmar.....	6	0	0	0	Quinces.....	0	0	0	0
Gravel.....	1	0	0	0	Raspberries.....	0	6	0	0
Grapes, at house.....	1	0	0	0	Strawberries.....	1	0	0	0
Lemons.....	1	0	0	0	Walnuts.....	1	0	0	0
Melons.....	2	0	0	0	ditto.....	1	0	0	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	4	0	0	0	Mushrooms.....	3	0	0	0
Asparagus.....	1	0	0	0	Mustard & Cress, punnet	0	3	0	0
Beans Kidney.....	3	0	0	0	Onions.....	1	0	0	0
Broad.....	3	0	0	0	Pickling.....	0	6	0	0
Beet, Red.....	1	0	0	0	Parsley per doz. bunches	3	0	0	0
Broccoli.....	1	0	0	0	Parsnips.....	0	9	0	0
Cabbages.....	1	0	0	0	Peas.....	1	0	0	0
Capicurus.....	1	0	0	0	Potatoes.....	1	0	0	0
Carrots.....	0	6	0	0	Kidney.....	2	6	0	0
Cauliflower.....	2	0	0	0	Round.....	2	0	0	0
Celery.....	1	6	0	0	Radishes.....	0	6	0	0
Col-worts.....	2	0	0	0	Rhubarb.....	0	3	0	0
Cucumbers.....	0	3	0	0	Salsify.....	0	9	0	0
Endive.....	2	0	0	0	Savoy.....	0	0	0	0
Fennel.....	0	8	0	0	Scorzonera.....	1	0	0	0
Garlic.....	0	8	0	0	Sea-kale.....	0	0	0	0
Herbs.....	0	8	0	0	Shallots.....	1	0	0	0
Horseradish.....	5	0	0	0	Spinach.....	0	8	0	0
Leeks.....	0	9	0	0	Tomatoes.....	0	2	0	0
Lettuce.....	0	9	0	0	Turnips.....	0	8	0	0
					Vegetable Marrows.....	0	2	0	0

POULTRY MARKET.—JULY 31.

EXCESSIVE heat makes quotations difficult. Much that is partially spoiled is sold at a very low price. Some that has only freshness of condition in its favour sells well.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls.....	4	0	0	0	Hares.....	0	0	0	0
Smaller ditto.....	3	0	0	0	Rabbits.....	1	5	0	0
Chickens.....	2	0	0	0	Wild ditto.....	0	9	0	0
Geese.....	6	0	0	0	Pigeons.....	0	10	0	0
Duckings.....	3	0	0	0	Pheasants.....	0	0	0	0
Guinea Fowls.....	0	0	0	0	Partridges.....	0	0	0	0

WEEKLY CALENDAR.

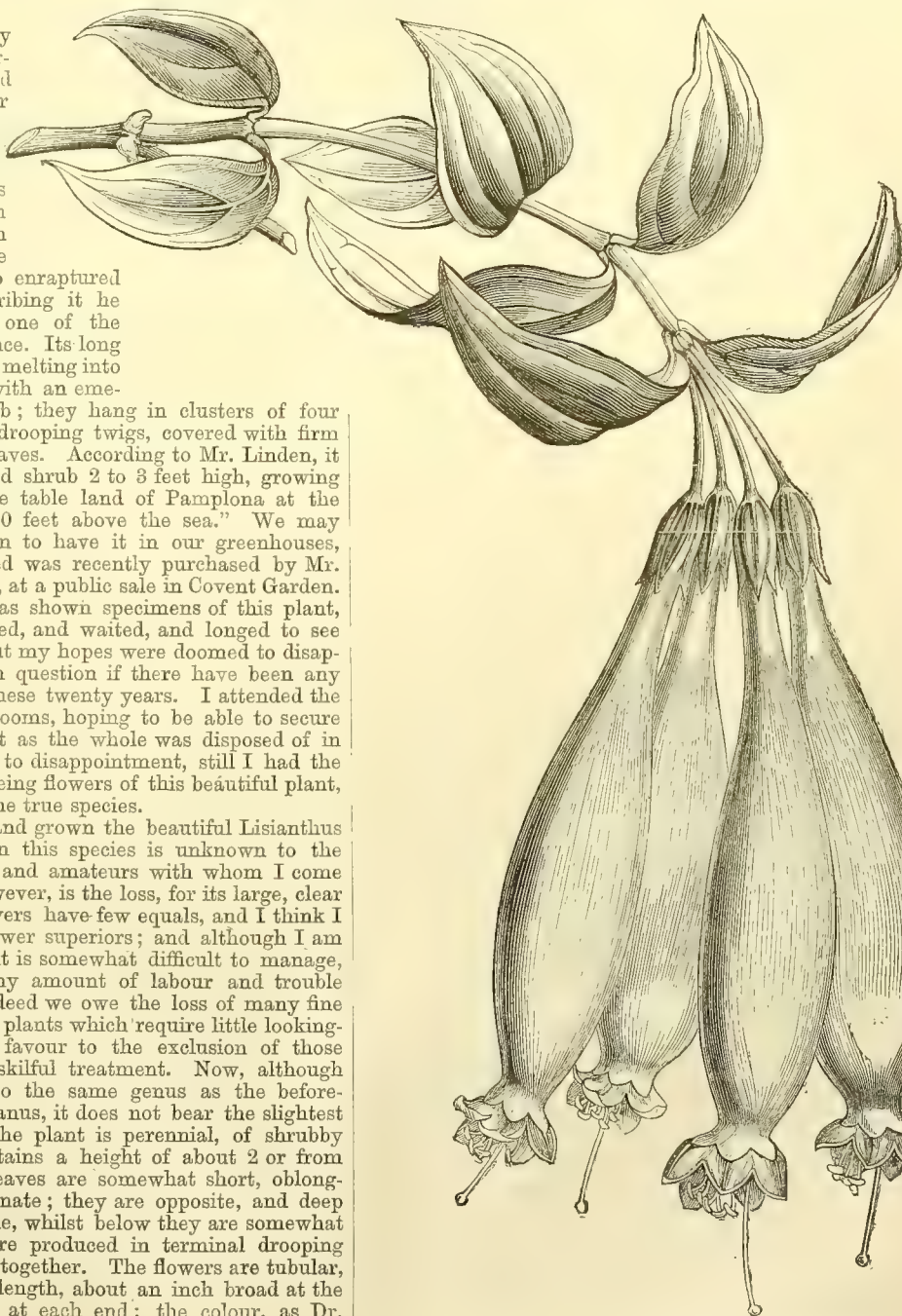
Day of Month.	Day of Week.	AUGUST 8-14, 1872.	Average Temperature near London.			Rain in 48 years.	Sun Rises		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.			
8	TH	Taunton Horticultural Show.	74.5	49.4	61.9	18	36	44	36	47	39	48	26	49	4	5	221
9	F		74.9	49.6	62.2	16	38	4	34	7	52	9	39	9	5	5	222
10	S	Royal Botanic Society's Anniversary Meeting.	75.1	51.9	63.5	19	39	4	31	7	4	11	55	9	6	5	223
11	SUN	11 SUNDAY AFTER TRINITY.	75.8	50.7	63.2	20	41	4	28	7	after.		14	10	7	4	224
12	M	Grouse shooting commences.	75.1	50.5	62.8	16	42	4	26	7	40	1	36	10	9	4	225
13	TU	Clay Cross Horticultural Show.	74.5	50.0	62.3	19	44	4	24	7	1	3	7	11	9	4	226
14	W	Royal Jersey Horticultural Society's Show.	72.9	50.8	61.8	18	45	4	22	7	21	4	49	11	10	4	227

From observations taken near London during forty-three years, the average day temperature of the week is 74.7°; and its night temperature 50.4°. The greatest heat was 93°, on the 10th, 1842; and the lowest cold 33°, on the 11th, 1864. The greatest fall of rain was 1.14 inch.

LISIANTHUS PRINCEPS.



REJOICE, my brother gardeners, and all amateur lovers and growers of plants, for this gem is likely soon to be seen



in our collections. The

late Dr. Lindley was so enraptured with it, that in describing it he said, "This must be one of the noblest plants in existence. Its long flowers are rich scarlet melting into yellow at either end, with an emerald green 5-lobed limb; they hang in clusters of four from the ends of the drooping twigs, covered with firm deep green opposite leaves. According to Mr. Linden, it naturally forms a tufted shrub 2 to 3 feet high, growing at the entrance of the table land of Pamplona at the height of 10,000-11,000 feet above the sea." We may confidently expect soon to have it in our greenhouses, for a batch of new seed was recently purchased by Mr. Williams, of Holloway, at a public sale in Covent Garden.

Many years ago I was shown specimens of this plant, and, oh! how I watched, and waited, and longed to see it in our gardens! But my hopes were doomed to disappointment, and I much question if there have been any plants in Europe for these twenty years. I attended the sale at Mr. Stevens's rooms, hoping to be able to secure a little seed early, but as the whole was disposed of in one lot, I was doomed to disappointment, still I had the satisfaction of again seeing flowers of this beautiful plant, thus proving it to be the true species.

I have long known and grown the beautiful *Lisianthus Russellianus*, but even this species is unknown to the majority of gardeners and amateurs with whom I come in contact; theirs, however, is the loss, for its large, clear blue, tulip-shaped flowers have few equals, and I think I may safely say still fewer superiors; and although I am quite ready to admit it is somewhat difficult to manage, yet it fully repays any amount of labour and trouble bestowed upon it; indeed we owe the loss of many fine plants to the fact that plants which require little looking-after have crept into favour to the exclusion of those which really require skilful treatment. Now, although *L. princeps* belongs to the same genus as the before-mentioned *L. Russellianus*, it does not bear the slightest resemblance to it. The plant is perennial, of shrubby habit, and usually attains a height of about 2 or from that to 3 feet. The leaves are somewhat short, oblong-lanceolate, and acuminate; they are opposite, and deep green on the upper side, whilst below they are somewhat paler. The blooms are produced in terminal drooping racemes three or four together. The flowers are tubular, from 5 to 6 inches in length, about an inch broad at the largest part, tapering at each end; the colour, as Dr.

Lindley has stated, is rich scarlet, melting into golden yellow, both at base and apex; the calyx is about half an inch deep, and of an intensely vivid green. Just imagine what the effect of a well-grown specimen of this plant would be; I cannot imagine anything that I know in the vegetable kingdom which would be more enchanting.

Lisianthus princeps belongs to the order Gentianaceæ, and is a native of New Grenada, where it grows at some 10–11,000 feet above the level of the sea, and consequently in a somewhat cool atmosphere; therefore it must not under cultivation be subjected to excessive heat, but a sheltered and cool place in an intermediate house will be found to suit it well. The soil should be composed of loam, peat, and sand in about equal parts, and the pots must be well drained. These plants in general do not like large shifts, but rather prefer repotting three or four times in the course of the season. During the early part of summer water abundantly, but as autumn approaches gradually withhold the supply, whilst during the winter months it must be administered very sparingly; at the same time care and discretion must be exercised to prevent the plant suffering and becoming unsightly. The growth commences as soon as the flowers fall, and during the early part of the growing season water should be given freely.

I hope soon to see this plant again in cultivation, for although I am fully aware it will require attention to develop its beauties, yet these are so great and rare that I am equally certain it will become a general favourite when known. If we can only persuade a Baines, a Cole, or a Ward to become its champion, there will be no fear of its being lost again to our collections, and we shall have a novelty indeed for our exhibition tents.—EXPERTO CREDE.

STRAWBERRIES ON A LIGHT SOIL.

As my method of treating Strawberries in a light soil differs somewhat from that of Mr. Douglas, and as I have been very successful since I have followed the plan which I now pursue, in having both fine fruit and large crops, I venture to add a few more notes to those that have already appeared in your columns.

I begin by stating that my soil is a light sandy loam, without a particle of clay, on a sandy subsoil. There is a fair depth of garden loam before getting to the sand, and the sand below is a deep bed of pure and very fine sand from 15 to 18 feet in thickness, which, without being wet, is yet retentive of moisture; the consequence is, the upper soil does not burn up or crack so much as if it were on a gravelly subsoil. I am particular in stating the nature of the soil, as the whole method of treating Strawberries entirely depends upon the quality both of the soil and subsoil, and I do not think there is any soil whatever that may not be made to grow good Strawberries, provided the proper treatment is adopted.

My plan on my own soil is this: I either select runners and peg them in 4-inch pots plunged in the beds, and do not cut them off the parent plants till they are well rooted; or, if I am getting fresh sorts from nurserymen or elsewhere, I plant them out for a short time under a frame, keeping them rather close and well watered till they make fresh roots, and then exposing them fully to the air previous to transplanting. I prepare my beds by digging in well-decomposed manure only one spit deep, not two, as I do not wish the roots to go deep down, and then I roll or tread the beds previous to planting, as if for sowing Onions.

I never attempt to get a crop the first year after planting, and I do not plant-out till the end of August or the beginning of September, when the young plants are not so liable to suffer from bright sun and flagging leaves, with the usual accompaniment of red spider. The plants, being either planted-out from pots or ball-planted from the frames, do not require much further attention, and on the approach of winter I mulch the beds over with short manure. This I rake off in April, so as to allow all the sun and air I can in the spring months, but I do not fork the beds over. The first year I always have a few fruit, not many, but I depend on my crops for the second and third years. I follow the same system of mulching with short manure, and taking it off the following spring, with all beds whatever their age, care being taken each autumn after fruiting to take all the runners off the plants, and to separate them again to single plants.

If the weather is dry during the flowering season I give the beds a good soaking of water, and then cover with a coating of chopped straw to prevent evaporation; it is also a very clean

material for the Strawberries to fruit on, and prevents slugs and snails working amongst it, especially if some barley chaff be mixed among the straw. I merely chop the straw through an ordinary chaff-cutter set to cut rather long, and it will be found much easier to put among the plants than long straw, as there is not the same chance of breaking off the flowering shoots, for it can easily be shaken in among the leaves; it is much better than the short grass from lawns, as it does not turn damp and mouldy. It is better to put it on while the plants are in flower, as it saves the green fruit from being splashed with dirt in heavy showers.

By adopting this method of treatment I have fruited beds four years in succession without any apparent diminution of crop. This year I could see no difference between two, three, and four-year-old beds. I have one bed which I have kept on now for seven years in succession to test the system, and though the plants are getting rather worn-out in one place, yet over the greater part of the bed the crops were very good indeed. I counted 92, 87, 95 fruit all fully developed on three plants in succession on this old bed.

I have said nothing as yet about the distance between the plants. I plant in beds, three rows in a bed, 2 feet between the rows, and 20 inches between the plants.

I have had twenty sorts fruiting this year—namely, Sir J. Paxton, Rivers's Eliza, Carolina Superba, Eleanor, President, Black Bess, Frogmore Late Pine, Mr. Radclyffe, Dr. Hogg, British Queen, La Constante, Fairy Queen, Cockscorb, Ananas Perpetuel, Bonne Bouche, John Powell, Triomphe de Paris, Princess Dagmar, Vicomtesse Héricart de Thury, Lucas, and Filbert Pine.

Of these the best for general cropping are Sir J. Paxton, Rivers's Eliza, Carolina Superba, Lucas, Filbert Pine, Dr. Hogg, Bonne Bouche. I do not care about Vicomtesse Héricart de Thury; it is good for early bearing and preserving, but only indifferent in point of flavour. Frogmore Late Pine is with me too hard in the flesh, and takes too long to ripen; Ananas Perpetuel no use; and La Constante too small. Mr. Radclyffe is almost identical with Dr. Hogg. Cockscorb has been enormous in point of size with me, but a very coarse, ugly-looking fruit; it is, however, a good-flavoured variety. Bonne Bouche is also a free bearer, and a fine quality of fruit. But to my mind nothing beats Lucas; it is a fine-flavoured fruit, good in shape, and a good cropper. The same may be said for Filbert Pine, but the colour of the Strawberry is not so good. For general utility no Strawberry beats Sir J. Paxton. It is a good preserver, a firm fruit that carries well, and a very sure bearer, and no handsomer fruit is grown either for size, shape, or colour; it is not, however, so fine a flavoured fruit as Lucas or British Queen. Princess Dagmar is a small firm fruit, with a slight touch of Hantbois flavour in it. Triomphe de Paris is also a high-flavoured fruit; so is Fairy Queen, but both are small when compared with such fruit as Sir J. Paxton or Dr. Hogg.

To sum up. Those who wish to succeed with Strawberries on a light soil may do so by keeping the soil firm about the roots, mulching with manure in winter, never forking or digging among the plants, but hoeing or hand-weeding to keep the weeds down. Separate the plants by removing all runners immediately after the fruiting season is over, and allow sun and air to play among them in May and June up to the flowering season, then mulch with the chopped straw.

I quite agree with "J. W.'s" remarks (page 91), that the Strawberry season is too short. Myatt's Eleanor is the latest here, but the quality is only second-rate; it is, however, to my mind, much superior to either Frogmore Late Pine or Black Bess, but it is very likely the last two do not suit my soil.—C. P. PEACH, Appleton-le-Street, Malton, Yorkshire.

LARGE WESTERN PLANE.—As the great Western Plane (*Platanus occidentalis*) is yearly becoming a greater favourite with planters, and as some of your readers may not be aware of the magnitude to which under favourable circumstances these trees attain, the dimensions of one now growing in these gardens may be interesting. Height, 94 feet; spread of branches, 60 feet each way from trunk; size of bole at 1 foot from the ground, 22 feet 6 inches; at 14 feet, 19 feet 4 inches. Here this great tree branches out into four distinct trunks, the smallest 8 and the largest 9 feet 6 inches in circumference. The tree is in excellent health, and to lovers of fine trees well worth a journey to see. Perhaps some of your readers having large Planes, will give their dimensions, as I fancy this is the

largest of the kind in England.—CHARLES WOODHAMS, *Barn Elms Park, Barnes.*

AQUILEGIA GLANDULOSA AND RED SPIDER.

A CORRESPONDENT, "A. R.," has some difficulty in keeping this plant in health in the south, and believes that it is owing to the dry atmosphere. Probably he and others are not aware that this and various species of *Aquilegia* are, in dry hot weather, very liable to be infested with red spider, and if this is not destroyed the leaves perish prematurely; consequently the flower-spikes are weakly and the flowers inferior. I dislodge the enemy by frequent syringing with clear water, working the water underneath the leaves. The beautiful *Primula cortusoides amœna* and its varieties are very subject to the attacks of red spider, and if the plants are neglected for a short period they are very much injured. Prevention is much better than any remedial agent, and the attacks of red spider can always be prevented by syringing in the case of plants not injured. With such subjects as those named above, syringing once a-day, and not allowing them to become too dry at the roots when they are in a growing state, will prevent it.

This little insect is the greatest pest of the gardener, and its power of reproduction is something enormous. It is a continual source of annoyance to the Vine-grower, and if it gains a stronghold in the viney there will be but small chance of well-finished Grapes. It is best to be on the look-out for it as soon as the Grapes are set; and should it appear on any of the leaves, let them be washed with a sponge, using rain water in which soft soap has been dissolved. It may thus be destroyed at an early stage, while a few days' delay would be fatal. In the Peach house it can be kept under by syringing the trees twice a-day—in the morning when the ventilators are opened, and in the evening when the house is shut up. It fastens on the young Strawberry plants as soon as they are rooted in the pots, and is a continual source of annoyance until the fruit is gathered. I would therefore impress upon all amateurs and others aspiring to success to use every effort to cleanse their productions from this foe. Except in the case of Grapes and plants in flower, frequent applications from the syringe will diminish it.

I see by an advertisement in the Journal for July 25th that it can be destroyed "at no cost and very little trouble . . . without the least injury to any delicate plant;" anyone forwarding a dozen stamps to the advertiser can have full information. If any of your readers have tried this, they would confer a boon on others if they would detail the result. They can do so without publishing the information for which they have paid.—J. DOUGLAS.

SHOW PELARGONIUMS.

THOSE who have patiently waited the turn of the tide, who have believed that a fashion which had revolutionised our gardening has seen its palmist days, are likely to be rewarded. Of course there are plenty of persons who believe that nothing else but the bedding-out system is to be tolerated, and that if time and space cannot be given to other things the scarlets and yellows must take precedence of all else. As long as tastes vary so will they find advocates, and it may be that one taste is as good as another; yet withal, there are many who think that we have gone far enough; and that once again the old favourites may resume their place. I do not dispute the fact that an immense stimulus has been given to the sale of plants by the bedding-out system, but whether good gardening has benefited by it is to my mind very questionable. I doubt if the patience, skill, and attention to minutæ which go so far in the making of a good garden, get anything like fair play in the management of plants which require but little if any of these gardening virtues. As I have recently said, so I repeat it, For our public parks and gardens by all means retain this system, let it have full swing there; and again, in large places belonging to our wealthier classes, let gardens on this system form a portion of their ornament; but modify it for smaller places, and rigorously exclude it, if you have the power, from the sweet cottage gardens of our labourers. My good friend Mr. Peach will, I am sure, agree in this latter matter, however he may dispute my statements generally.

These thoughts have been forced upon me by looking at my small greenhouse. On one side I have the shelves filled with the new Show Pelargoniums of this and last season, and on the other with the newest and best of the Zonals, single and

double. Can there be a moment's hesitation as to which is the more beautiful of the two? I may be told that the former last but a short time, the latter for a whole season. Well, there is something in that; still, if you can have, as you easily can, a succession of bloom for six weeks, I think no one ought to complain: and in delicacy and brilliancy of colour how immeasurably beyond the Zonals are the numerous lovely varieties of the Show Pelargonium that we possess! But then we hear the cuckoo cry, "They are so much alike." So are gems, so is china, so are antiques to those who are mere lookers-on. Get interested in them, come to examine any of these things, and you will wonder that you could ever have thought them alike. "Then but little progress is made; and although new flowers are sent out every year, there is no improvement on those of eight or ten years ago." If anyone thinks this, he has only to procure the flowers of those days and grow them beside those of the present, and he will soon acknowledge how erroneously he has judged. Those who thought highly of such flowers as John Hoyle, Sunny Memories, &c., would be much astonished to see how thoroughly they have been distanced by the flowers of later years.

Having through the kindness of Mr. Charles Turner (to whom is due the credit of persistently clinging to the Show Pelargonium when abandoned by well-nigh everybody else), been enabled to have the new varieties of last season growing under my own eye, I have made the following notes as the result of my repeated examination of them during their season of flowering. Of highly coloured flowers there are some which for size and brilliancy have not been approached heretofore. *Cæsar*, *Brutus*, and *Pompey* are all remarkably fine; while in *Rosierucian*, *Achievement*, and *Brigand* we have pink and lilac-coloured flowers of great beauty.

Achievement.—A very large flower; colour a lilac rose, dark maroon spot on the top petals, centre white. This is a variety of very decided merit and novelty.

Brigand.—Dwarf close-growing plant; bloom in the style of *Troubadour*, although the pink is more cherry-coloured than in that variety; clear white eye.

Brutus.—A richly coloured flower; deep crimson upper petals nearly covered with a deep black spot, and having a narrow crimson margin. Large and fine.

Cæsar.—Another richly coloured flower; bright lower petals; top petals dark maroon with a narrow fiery edge.

Counsellor.—Rich rosy pink; upper petals with a small spot; white eye. A very large and attractive flower.

Kingcraft.—Dwarf habit; a richly painted flower; white eye. Novel in appearance.

Pompey.—Very large; rich in colour; orange-pink lower petals, maroon spot, orange margin. As far as I can judge, the finest flower of the season.

Prelate.—A fine purple flower; black top petals, with a narrow purple margin. Excellent.

Prime Minister.—A good flower; crimson; margin of upper petals lilac.

Rosierucian.—Not so well-shaped a flower as some of the preceding, but novel in colour, a sort of rosy purple.

Royal Bride.—Cherry. This is also a novelty in colour, not brilliant but pretty.

Sunset.—Bright crimson scarlet; dark spot on the top petals; shaded with rosy carmine.

Zephyr.—Deep-coloured variety; painted crimson lower petals; a broad edge of bright crimson.

—D., Deal.

COPINGS FOR FRUIT WALLS.

I HAVE been looking for several weeks in the Journal to see if any communications would follow upon Mr. Luckhurst's very interesting article on copings as a protection against frost. The failure of fruit on the walls this year seems so universal, that to those who, like myself, hesitate to undertake the additional cost and care of an orchard house, the subject of the best means of securing the out-door crop from cold and frost assumes considerable importance. Mr. Luckhurst's experience corresponds precisely with that of a farmer friend of mine, who tells me that since he has placed a straw coping over his walls, he has uniformly had a good crop on his trees. The only crop of Apricots that I have seen this year is on a tree planted against a house, the eaves of which project some distance over, so that no drip can possibly touch it. A Climbing Devonians Rose of my own, some 15 feet high, lost all its early leaves and buds, save a few which nestled beneath the projecting sill of a window.

It would, I think, be a great boon to some of your readers if those of your correspondents who have tried copings would

give us the results of their experience. Should they be permanent or otherwise? Should they be of wood or of stone? What should be the width? How should they be fixed? Should they have netting attached to them or not? These are questions which I for one should like to see discussed.—E. BARTRUM, *Berkhamsted, Herts.*

ADVICE TO BEULAH—VARIEGATED GERANIUMS.

I AM glad that the sisters of Beulah agree so well together in their gardening ideas. If they think that anything can be good except from Chilwell, let them try May Queen; they will find it a good match for Pearl with even a better flower. But, *me judice*, I do not think the flower ought to have anything to do with the merits of a variegated-leaved Geranium. I take off all the flowers from my variegated-leaved beds as I want them either to be white, if of the white-edged section, or gold, if of the tricolor, and the flowers prevent their harmonising with other beds. Either pink or scarlet flowers on the top of a white variegated bed interfere very much with the effect it ought to produce. Now, take off the flowers from Pearl and it is no better than Miss Kingsbury, if so good, because there is a dark zone in Pearl which is apt to get very dingy.

I quite grant that for an independent bed, say a set of circular beds on grass, where each bed is sufficiently separate so as not to depend on any other beds, nor any other beds on it, then Pearl with its flowers on is very effective. But for a white bed in combination I prefer Castlemilk, Mrs. Lennox, and Mountain of Light, though the latter two do not grow sufficiently in some places; and for a cream-coloured bed Flower of Spring, which has the best habit of any variegated-leaved Geranium that has yet been sent out; and I think, as a rule, all variegated-leaved Geraniums of the white section ought to be sports from varieties with pure green leaves without any zone.—C. P. P.

THE ORANGE FUNGUS ON ROSE LEAVES.

Va victis! Yes, beaten I am, and not even did the Germans exact a heavier tribute than that which has been demanded of me. I mentioned last year that I had had a very violent invasion of orange fungus amongst my Roses, and that I feared my bloom for this season was spoiled; but I had no idea then of what I was to be subjected to. Whether the ungenial spring did it, whether soil has anything to do with it, or what has been the cause, I know not; but the fungus again appeared, and half my Roses are dead. Can anyone tell me what is the cause or suggest a remedy? Let me state the case. My garden is open; there is but little foliage near where the Roses are, certainly not enough to confine the currents of air; the soil is a light, rich, vegetable mould, some 3 feet deep, in which anything ought to grow, and for two years nothing could be finer than their growth. Last year, as I have said, the orange fungus appeared. At first I was inclined to think the soil might be too rich, but on looking over my beds I found some plants growing vigorously, and others close to them dying and dead. Most of the Roses are on the Manetti stock, some on their own roots. As if to make the matter still more perplexing, fine healthy plants which I received from Mr. Keynes and Mr. George Paul are just as bad as those which I had grown for years. It is very disheartening, and I should be very thankful for any advice on the subject.—D., *Deal.*

[We shall be obliged by communications relative to this scourge of the Rose, for it is every year becoming more severe and destructive.—Eds.]

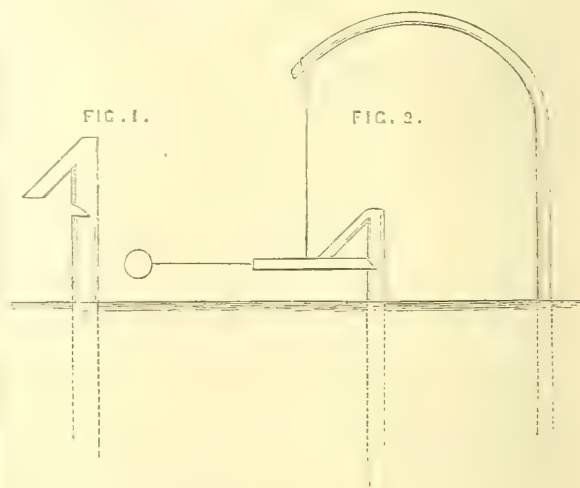
DEATH OF MR. JAMES IVERY.—We regret to have to announce the death of Mr. James Ivery, of Dorking, which took place on the 2nd inst., in the forty-ninth year of his age. For many years Mr. Ivery took a prominent place among floral nurserymen as a successful raiser and cultivator of *Azalea indica* and its varieties. To him our gardeners owe many varieties which will long hold a prominent place among these highly popular flowers. Among these we may mention *Iveryana* and *Criterion*, though now old, yet ever new; *Admiration*, *Barclayanum*, *Beauty of Dorking*, *Carnation*, *Flower of the Day*, *Gem*, *Fascination*, *Emma Ivery*, &c. Our correspondent "D., *Deal*," adds—"No one has more encouraged the taste for our beautiful British Ferns than he has done, and his wonderful collections exhibited at many of our metropolitan shows have

excited the admiration and wonder of the many who had been previously unaware of the beauty that they possessed. As a man he was singularly modest and unobtrusive, and one of those to whom his collections were not only objects of interest as to their money value, but for their own beauty, and as evidences of Divine wisdom and power. He was a simply religious and godly man."

A CHEAP RAT TRAP.

For the benefit of "J. C. J. B.," and others, I send you a very simple and inexpensive mode of catching rats. The trap consists of a hooked stick (*fig. 1*), a piece of straight stick about 4 inches long, with one end chisel-pointed and a slit in the other end, and a bender, or rod, about 4 feet long, not too stiff. A bit of string is tied to one end of the bender, and a piece of fine wire with a noose is attached to the string and made fast to the chisel-pointed stick about an inch from the slit end.

To set the trap, the hooked stick is driven firmly into the



ground about 9 inches from the rats' run, or hole, and the bender is driven into the ground about 3 feet from it on the same side of the run, or hole. The bender is then drawn down to the hooked stick, and the chisel-pointed stick is put under the hook and fixed in the notch, as shown in *fig. 2*. The wire snare is put in the slit and adjusted in the run about 1 inch from the ground. There may be several traps set on the same run. *Fig. 2* shows the trap when set. When the rat is caught he pulls the stick out of the hook and is immediately suspended in the air, and is soon dead and out of the way of the next comer, which passes on to the next trap, and is very soon suspended likewise. There is no fear of catching game, poultry, or cats in such traps, as is the case with iron ones.—W. GRAVES, *Great Lodge Gardens, Colebrook Park, Tonbridge.*

HEATING BY HOT WATER AND HOT AIR.

I AM obliged by the willingness of the Editors of this Journal to allow me to challenge discussion on the subject of the best modes of heating under varying circumstances. The writer of the remarks on the horticultural appliances at Birmingham has, I think, thrown down the first glove, and I beg permission to take it up.

It is now some ten years and more since I read a paper by Mr. Robson (vol. i., new series, page 148), which ended with these words—"I must conclude with again requesting our scientific friends in the firestone line to come forward and give us a helping hand, for so long as we waste so much heat in brickwork not wanting it, and in other ways allowing it to go up the chimney, so long is our heating apparatus imperfect, and the sooner it is improved the better, for it must be confessed nothing in the garden line has made so little progress for thirty years or more." I am not in the firestone line, nor can I lay claim to being scientific, but I may without conceit claim to be a friend to all of the gardening craft. For years past I have worked in the direction indicated by Mr. Robson; and I must say that the plan submitted to inspec-

tion at Birmingham was not theory only, but an illustration of what has been, in its measure, a successful outcome of more than one failure. The exhibition of the means by which success has been attained may perhaps have deserved (if I am not unduly partial in saying so), a criticism somewhat less sweeping than the broad assertion "that no system of hot air has yet been invented in which all the heat has been extracted from the fuel in a stove, and given up to the buildings to be heated." That's so! as a Yankee would say. There never has been, and there never will be, such an invention. But then, I do not believe that any such claim would be made on behalf of hot water, not even by Mr. Cannell for his "circulator." I am more concerned with the truth or falsity of the dictum that "the heat in the chimney in stoves is invariably great, and *must*, unless economised by a flue, be wasted." It shall be freely admitted that if I cannot reduce my chimney temperature to the chimney temperature of any apparatus doing like work, under like conditions, so far I have failed. Every degree of superfluous heat in a chimney is a price paid for some advantages real or supposed, and if these advantages are not worth that price the system must fail. All this is matter for argument or demonstration, but I am unable to reply to your reporter's observation that the heat produced by a certain system "is not good for plants," except by saying that the system referred to is precisely the one I do not adopt.

However, although the writer of the remarks has failed to notice how some poor attempts are made by me to obviate the very difficulties which he points out, still his observations show where the difficulties do lie.

I dismiss the flue at once. It has one cardinal merit—it is an admirable heat-exhauster. Continue it far enough and you arrive at that point of exhaustion of heat which leaves just enough to create draught sufficient for combustion and nothing over. But if made secure it is costly, and dangerous even then, exigent of supplies of moisture, and utterly incapable of adaptation to varying wants. Therefore, with all deference I place the smoke-flue as being, after a bare stove, the most *imperfect* form of heating.

Next, as so much turns upon chimney heat, it may be well to consider the conditions under which this must be augmented, or may be diminished. Under no system can all the heat of the fuel be devoted to heating the building, consequently it must be divided into two portions. A certain quantity must be used in creating draught through the fuel, and not one vibration of this will be available for heating purposes; the residue is what we have to use or to waste, as the case may be. Our business, then, is to cause the quickest and most complete consumption of fuel by the expenditure of the smallest quantity of chimney heat. The first two conditions represent power, the last represents economy. Attach two furnaces similar in all respects, the one to a tall smoke-shaft, the other to a short one. The ignition in the first shall be kept in vivid glow with a chimney temperature mild as milk, while the like intensity of combustion in the second must be purchased at the cost of just so much fuel as, being consumed, will urge the current in the shorter shaft to a velocity equal to that obtained by the superior altitude of the taller.

Here, *par parenthèse*, I would observe that I saw no regulation of the height of the smoke-shafts in the boiler trials at Birmingham, and yet additional height of shaft is equivalent to an additional supply of fuel. A furnace that may work with the utmost economy with a tall shaft, and so carry all before it, may be of little use, or refuse to burn at all, in situations where only a short shaft is available. Here we see the difficulty of the old stove-heating. So long as stoves were of small superficies intense combustion was the essential condition of their power, but very few were the cases in which this intense combustion was excited by the cheap means of a lofty smoke-stack. It was excited by the dear means of extra fuel consumed in the furnace; and if attempts were made to utilise the draught heat, the inevitable result was the diminishing the power of the stove in more than equivalent proportion to the gain from the flue.

But now we improve upon these conditions of stove-heating, and, widely extending the heating surface by the gill arrangement, we impel upon it, with the greatest velocity at our command, currents of moistened air, which, as Count Rumford has demonstrated, are far more powerful in abstracting heat than dry currents are. Thus we are able to obtain quantity of warmth instead of intensity; and burnt air, and scorched plants, and split furnaces are no longer causes of dread. It seems almost superfluous to observe that a stove of this kind

standing free in a shaft, and for ever swept by rapid currents of air, must yield up more heat than a boiler bedded in masonry; and seeing how often hot-water pipes are, for the sake of appearance, sunk in flues beneath the floor, there seems to be no valid reason why such flues should not be used without the pipes.—EDWARD HOUSMAN.

MR. E. HOUSMAN has invited discussion on "hot air *versus* hot water," see pages 74 and 75. Now I think very few gardeners, if any, will be in favour of introducing the system of hot air for heating horticultural buildings. I well remember when an apprentice the Polmaise system of hot air being introduced to heat an orchard house, and although evaporating troughs were used on every available space, the red spider—that terrible pest to gardeners—took a strong hold in spite of syringing and other means employed to check it. I shall be anxious to hear what one of our most practical gardeners has to say respecting it, I mean Mr. Fish. I venture to think he will agree with me in favour of hot water. The outlay may be more at first, but the advantage and benefit accruing in the genial temperature obtained will more than compensate. Whatever scientific argument Mr. Housman may bring to bear in support of his system, he will fail in convincing horticulturists generally that hot, fervid air coming in contact with vegetation, which undoubtedly it must, will be beneficial to its well-being. As a practical man who has had experience in all the different ways of heating, but never found any to supersede hot water, I give my veto decidedly against hot air for horticultural purposes.—J. C. M.

ROYAL HORTICULTURAL SOCIETY.

AUGUST 7TH.

THIS Show had for its leading feature Variegated Pelargoniums of the several classes commonly known as Gold and Silver Tricolors, Gold and Bronze, Golden Selves, and Silver-edged; but no one could doubt that these, and especially the two first-named, must have greatly declined in popularity, for the competition was anything but strong. The general impression seemed to be that the thing had been overdone. The Show, held in a small tent near the Council Room, was, however, good for this season of the year; and though Messrs. Downie & Co.'s Phloxes had been beaten severely by the late rains, they constituted its most important part, occupying as they did nearly the whole of one side of the Exhibition tent, and forming a brilliant display.

The best collection of Variegated Pelargoniums came from Mr. Turner, of Slough, who had no less than fifty. Among the best were—Golden Tricolors, Mdle. C. Nilsson, Mrs. Headley, Lady Cullum, Lucy Grieve, Mrs. Turner, Macbeth, E. R. Benyon, and Sir R. Napier; Silver Tricolors, Lady B. Brydges, Princess of Wales, Italia Unita, and Mabel Morris; Silver-edged, Silver Star, Miss Bridges, May Queen, and Princess Alexandra. There was only one other collection—that from Mr. Pestridge, Greenway Nursery, Uxbridge. In it the most conspicuous Golden Tricolors were E. R. Benyon, E. Horner Reynard, Brilliant, Prince of Wales, Mrs. Dunnett, Howarth Ashton, Mrs. Grieve, Sir R. Napier, and Florence. In Silver Tricolors, the best in this collection were Miss Burdett Coutts, Lass o' Gowrie, Mabel Morris, and Mrs. J. Marshall.

Class 2 was for three plants of the best Golden Tricolor. Mr. Pestridge was first with Sir Robert Napier, very dark zone. Mr. Turner was second with Peter Grieve. For the best Silver Tricolor, Messrs. Downie, Laird, & Laing were first with Mrs. Laing, very finely coloured. Mr. Turner was second with Mrs. Rousby, and Mr. Pestridge third with Charming Bride. The first prize for the three plants of the best Bronze and Gold (Bicolor) Pelargonium went to W. E. Gumbleton, from Messrs. Downie & Co., having a very broad dark chocolate zone, a very distinct variety. The best of the other varieties were Mrs. Harrison Weir and Prince Arthur.

In Golden Selves the first prize went to Golden Banner from Mr. Pestridge, and a third to Yellow Boy, rather coarse, from Messrs. Downie & Co. For a Silver-edged variety Mr. Turner was first with finely grown plants of May Queen; Mr. Pestridge second with Blushing Bride, not so pure a white. The only Nosegay Pelargonium in bloom came from Mr. Turner, the variety being Mrs. Quilter, fine lively pink with a white eye. In double varieties Mr. Pestridge was first with a remarkably good plant of Victor Lemoine, scarlet; Messrs. Downie & Co. second with Macleod, of the same colour, but the individual flowers larger.

Among the exhibitions in the Miscellaneous class were a fine collection of Tricolor Pelargoniums from Messrs. E. G. Henderson & Son, with a fine white-variegated Ivy-leaf variety called Ariosto. From R. A. Thompson, Esq., came a collection of

British Ferns; and from Messrs. Downie, Laird, & Laing, Stanstead Park Nurseries, a splendid collection of Phloxes. Madame Domage, Mrs. Laing, Purple Prince, La Candeur, A. F. Barron (very fine), J. K. Lord, Madame Billy, M. Conrad, A. M. Simons, and Lothair were a few of the best.

FRUIT COMMITTEE.—G. F. Wilson, Esq., F.R.S., in the chair. Mr. Thomson, of the Tweed Vineries, Clovenfords, N.B., sent bunches of his new seedling Grape Duke of Buccleuch. This is a large and very handsome Grape, similar in appearance to the Golden Champion, but differing from it in the form of the berries in the same respect as the Dutch Hamburgh differs from the Black Hamburgh, in being rounder, and in a prevalence of oblate berries. The flavour is superior to that of Golden Champion, being much richer and fuller. The bunch is ovate and compact, 8 inches long, and the same in width across the shoulders. The berries are very large, roundish, and oblate, of a pale greenish amber colour, and with a large style point. The flesh is tender and very juicy, with a Hamburgh flavour. The Vine produced eight of these handsome bunches, is two years old, and is growing in the same house with Black Hamburgh, than which it is one month earlier. The Committee admired the Grape extremely, and in accordance with Mr. Thomson's wish appointed Mr. Barron to visit Clovenfords, and report upon the constitution of the Vine.

Mr. Tillery, of Welbeck Gardens, sent a seedling Nectarine, raised from crossing Balgown and Elruge. It is a large, handsome fruit, and Mr. Tillery has evidently secured a cross, but the fruit now produced is not an improvement on the Balgown. Mr. Tillery also sent a dish of handsome Grosse Mignonne Peaches, and a fruit of Queen Emma Melon, grown in a box in a Pine stove, and the soil only the turfy loam from the top of a limestone rock. The boxes are about 4 feet long and 15 inches deep, and three plants are put into each box. About two fruit are left on a plant, so as to grow them of a good size. The fruit exhibited was 6 inches in diameter. Mr. J. Lane, gardener to J. Bray, Esq., Pyrgo Park, Romford, sent dishes of Noblesse and Late Admirable Peaches, and a dish of Violette Hâtive Nectarines. Mr. Roberts, Holwood Park, Kent, sent a fine dish of Barrington Peaches. Mr. Kirtland, of Bletchington, Oxon, sent a dish of Moorpark Apricots.

Mr. M. Newman, of The Elms, Hartington, sent a dish of Red Currants called Hartington Wonder, which is the same as Knight's Long Bunched Red. Mr. Shore, gardener to Rev. J. P. Heyworth, Westbury-on-Trym, sent a seedling called Shore's Hybrid, which was not considered of sufficient merit to recommend it.

Mr. John Henson, gardener, Newark, near Peterborough, sent a seedling Gooseberry called Henson's Seedling, a large, round, dark red, hairy fruit of excellent flavour. Mr. J. Beach, gardener to E. J. Herries, Esq., St. Julian's, Sevenoaks, sent a dish of seedling Gooseberries called Emma, but which is very similar to other varieties in cultivation. Mr. Geo. Kirtland, Bletchington, sent four dishes of Gooseberries of large size. Mr. Piccirillo, of Wigmore Street, sent a large Water Melon, but the flavour was not approved.

Messrs. Lane & Son, of Berkhamstead, sent a large collection of admirably grown Grapes, consisting of Black Hamburgh, Foster's White Seedling, Buckland Sweetwater, Muscat of Alexandria, Frankenthal, Duchess of Buccleuch, Chaoush, and Muscat Muscadine. This meritorious exhibition received a cultural commendation.

Messrs. J. & C. Lee, of Hammersmith, sent a dish of Imperial Long Pod Kidney Beans, 7 to 8 inches long in the pod, and which were approved of by the Committee as a fine fleshy podded Bean. Mr. Walter, of Calne, sent a seedling Pea, which was to be grown in the garden at Chiswick before an opinion could be given upon it. Mr. Piccirillo sent new Orange Garlic, and Naples White and Naples Red Onions, the latter of enormous size, some of the specimens being 8 inches in diameter, and weighing 4 lbs. 2 ozs.

Mr. Berkeley reported that the roots from Hayling Island shown last year as Shallots proved to be the Potato Onion. Mr. Record, of the Gardens, Hatfield, sent large clusters of the fruit of *Habrothamnus elegans*, which created much interest from the rarity with which the plant produces so much profusion of fruit.

Prizes were offered for the best dishes of early Plums. The first went to Mr. J. Clark, gardener to Major General Claremont, Roehampton, for Rivers' Golden Gage; the second to Mr. J. Beach, gardener to C. J. Herries, Esq., St. Julian's, Sevenoaks, for Early Orleans. Mr. Beach was also first for the best collection of Gooseberries, Mr. Earley, Valentines, being second; and for the heaviest six Gooseberries, the prizetakers were Mr. G. Kirtland, Bletchington, and Mr. J. Kirtland, Albion Nurseries, Stoke Newington, Mr. Beach being third.

FLORAL COMMITTEE.—Mr. J. Fraser in the chair. Mr. Bull, Chelsea, sent a collection of plants, including *Phormium Co-*

lensoi variegatum, the fine purple-flowered *Lasiandra macrantha floribunda*, several Palms, and *Curculigo recurvata variegata*. From the same exhibitor came also a collection of Aroids, including a fine specimen of *Godwinia gigas*. R. A. Thompson, Esq., South Kensington Museum, sent seven varieties of *Polystichum angulare* found at Sidmouth, and *Lastrea Filix-mas Feslinyi*, which received a first-class certificate.

Mr. Burley, Paradise Nursery, Brentwood, exhibited new Zonal Pelargoniums, among which was *Desdemona*, one of the salmon class, of very good form. Mr. H. Eckford, gardener to Earl Radnor, Coleshill, sent a stand of seedling Verbenas, of which Mrs. Lewington, rosy crimson with a magenta tinge, and purplish near the eye, had a first-class certificate. There were, besides, several other good varieties. Mr. C. J. Perry, The Cedars, Castle Bromwich, also contributed a fine stand of cut blooms, including several seedlings, among which Rev. P. M. Smythe was noticeable as a fine violet purple. Mr. J. King, gardener to the Rev. J. Wiggott, Allanby Park, Binfeld, had a new double and a Bronze Pelargonium, neither of them remarkable.

From Mr. Green, gardener to W. Wilson Saunders, Esq., came a fine plant of *Bertolonia marmorata* in flower; from Mr. A. Boxall, gardener, Claybury Hall, Woodford Bridge, an excellent specimen of *Cattleya crispata*; and from G. F. Wilson, Esq., Heatherbank, Weybridge, a plant of a tall-growing variety of *Lilium lancifolium* called *splendidum*, with a spike little less than 8 feet high, and the whole of the upper 3 feet bearing flowers or flower-buds of the same character as *rubrum*.

Messrs. Standish & Co., of Ascot, had an extra prize for a fine collection of *Gladiolus*, exhibiting also a basket of *Bouvardia Vreelandii*; and a similar award was made to Messrs. F. & A. Smith, of Dulwich, for an excellent lot of Balsams. Mr. Rowe, gardener to Mrs. Lewis, Rookery, Roehampton, also sent a capital group of the same flower. From Mr. B. Porter, Sion Lodge Gardens, Isleworth, came some seedling Hollyhocks; and from the Rev. Lord Hawke, Willingham Rectory, cut spikes of two varieties of the same flower, of which Eleanor, rose, received a first-class certificate. Mr. Chater, Saffron Walden, sent a fine stand of cut blooms.

From Messrs. Veitch, Chelsea, came a fine specimen of *Grammatophyllum Ellisii*, which had a cultural commendation.

A MEETING of the Committees was afterwards held to take into consideration the Treasury minute in reference to Mr. Ayrton and Dr. Hooker, particulars of which we shall leave till next week.

TRIAL OF BOILERS AT BIRMINGHAM.

FURTHER correspondence on this subject has reached us, which is as follows:—

[FROM MR. CANNELL.]

"Woolwich, S.E.,

"22nd July, 1872.

"SIR,—I beg to enclose for the information of the Local Committee a copy of letter forwarded by me to Messrs. Hartley and Sugden on hearing to whom the gold medal had been awarded.

"I am, sir, yours obediently,
"Mr. B. A. Hallam,
Sec. Local Committee."

[COPY OF LETTER.]

"Woolwich, S.E.,

"20th July, 1872.

"SIR,—I beg to acquaint you that on hearing of the award of gold medal to your boiler, a combined protest was instantly lodged against the illegality of such award, the same being dispatched to the Local Committee, the Council of the Royal Horticultural Society, and all the gardening periodicals. Points in dispute will be duly forwarded as soon as all evidence can be collected.

"I am, sir, your obedient servant,
"Messrs. Hartley & Sugden,
"Atlas Works, Halifax."

[FROM MR. BENJAMIN HARLOW, ENGINEER AND IRONFOUNDER, MACCLESFIELD.]

"July 22nd, 1872.

"DEAR SIR,—In answer to your note of this morning, my opinion is the same as yours and the other competitors'. Great injustice has been done to all of us and the country in awarding the gold medal to Messrs. Hartley & Sugden, and I think with you the Local Committee ought to be made aware of the facts. According to the regulations, Messrs. Hartley & Sugden disqualified themselves in stating the price of their boiler to be £15 10s., which is worth nearly double the money. I gave them an order for twelve at the price, with a proper trade discount, but I heard no more about it. They were also disqualified another way—that is, a judge has no right to judge articles he is agent

for; now such is the case; also their competing with a boiler for 500 feet of 4-inch piping, when it was well known by the agent that this boiler was at first entered for 1000 feet; also as regards the three trials of their boiler, which were anything but satisfactory, even after the boiler had the addition of new doors and frames, new soot-box, and refixing. The pipes, it was well known by all, were cold the next morning. The quality of coal supplied to them on their third attempt to conquer was much superior to any used by others. This I saw myself with others; there was upwards of 2 cwt. brought on the ground in a large barrow. Mr. Johnson knows it, and will, if straightforward, attest the truth of what I say. I have also a letter from Mr. Mee, of Liverpool; he with the rest is much aggrieved at the proceeding; he also states the boiler tried by Messrs. Hartley and Sugden cannot become a useful one, as the expense attending the making of such would always preclude its general use. My opinion also is just the same. I have been amongst iron-work all my life, my father before me, and I think I understand what is right and what is wrong. This gold-medal boiler can never be useful, even if it had gained the medal honourably.

"To Mr. Cannell, "I am, dear sir, yours truly,
"Woolwich," (Signed) "B. HARLOW."

"P.S.—I shall be glad to hear from you again respecting the unjust award. I have sent a letter I received from Mr. Mee to Mr. Lumby. Now let this matter be gone into at once without the least delay. You know Mr. Hartley is a very particular friend of Mr. Hassall's. It seems very remarkable every competitor seemed suspicious all along that the award would drop into the hands of Hartley & Sugden.

(Signed) "BENJAMIN HARLOW."

[FROM MESSRS. HARTLEY & SUGDEN.]

"Mr. B. A. Hallam, "Atlas Works, Gibbet Street, Halifax,
"July 30th, 1872."

"DEAR SIR,—Our attention has been drawn to a letter from Mr. Cannell to you, enclosing one received by that gentleman from Mr. J. F. Mee, of Liverpool, on the subject of the recent award of the Judges of the Royal Horticultural Society for hot-water apparatus. We perused these letters with the utmost astonishment, and cannot but believe that the writers have chosen to ignore the real facts in connection with the trials, and allowed their disappointment at the decision of the Judges to overcome their discretion. We therefore beg respectfully to request that you will, in justice to us, place this communication before the Local Committee, to whom it would seem Mr. Cannell has made his complaint. While doing so we cannot help remarking that both he and Mr. Mee would have shown much more dignity had they taken care that their assertions were accurate before rushing so impetuously into print upon the subject.

"With respect to the allegations of unfairness and partiality on the part of the Judges, and particularly of Mr. Hassall (who is styled, with what warrant we are at a loss to conceive, 'the principal Judge'), we think we may very well leave those gentlemen to protect their own reputation. Their desire to give every competitor 'a fair field and no favour' will, we are sure, have commended itself to the Local Committee, rendering anything we might say on their behalf quite unnecessary and superfluous; but inasmuch as our own honour and character are thus impugned, we beg most emphatically and indignantly to repudiate Messrs. Cannell and Mee's implications.

"And now for the alleged facts which our opponents give as reasons why the award should be reversed. Our trial with Mr. Dennis on the 26th June was anything and everything but a 'dead failure.' Our boiler got up the heat so quickly, and to such a satisfactory temperature, that we were prepared to rest our chances of success upon its results. During the course of the competition we learned, however, that a new trial had been granted to other competitors, and alterations in their setting allowed; and as we found that by increased size of dead plate, which necessitated a new front and flue-box, our boiler would be rendered very much more efficient, we applied for a further trial, which was granted on the 3rd of July, being the day on which Mr. Mee was proceeding with his second trial (through the connections having given way) with 500 feet of pipe, our trial being conducted with the remaining 500 feet. The alterations thus made in the dead plate necessitated an alteration in the front, and Mr. Cannell himself also altered his dead plate to at least a similar extent. Our alterations caused us to have to bring out our brickwork 6 inches only—not 15, as Mr. Mee states. As this course was also allowed to other competitors, where was the special favour accorded to us thereby? With respect to our having obtained these fittings from Mr. Hassall, we have only to say that to our knowledge four, if not more, of the competitors did the same, one of whom, indeed, brought only his boiler to Aston, obtaining not only fittings, but all connections required for working, from Messrs. Hassall & Singleton.

"With the result of this trial our boiler more than justified our highest expectations, as in the space of thirty-five minutes from the time of lighting the fire it caused a perfect circulation

of heated water through the whole 500 feet of pipe, and in two hours and fifty minutes the heat was so intense as to force the water out of every one of the six air pipes, which were provided for testing, being at, or very little under, boiling point.

"With respect to our boiler being allowed to compete for 500 feet, although originally entered for 1000, the circumstances are simply these. The original entries were made by correspondence, and not until we arrived on the ground did we find that other competitors were trying boilers very much larger, and with considerably more heating surface than our own. The further trial for 1000 feet was not made at our request, and was, we presume, for the purpose of more fully acquainting the Judges with the merits of the respective boilers. We may state that with the 1000 feet of 4-inch pipe we got a perfect circulation in one hour and forty-five minutes, and in about five hours the whole of the water was up at 185°. After being banked-up for twelve hours there was a fair fire, which burnt till two o'clock the following day, when it was put out.

"With respect to the weight and cost of the boiler, Mr. Mee is entirely and unmistakably in error. The weight he gives—9 cwt. 3 qrs., included furnace front, with fire and ashpit doors, soot-box the width of the boiler front, dead plate, and one 4-inch flow and two 4-inch return sockets. Now, as both Mr. Mee and Mr. Cannell know, these are invariably charged extra to the cost of the boiler; and as to the price being 6½d. per pound, it is simply absurd.

"This reply disposes of the whole of the complaint in Messrs. Mee and Cannell's letters, and we think it needless to add that our motives in the competition have been from the first pure and irreproachable, and we confidently leave the issue in the hands of the Judges, the Committee, and the public, feeling sure that the justice and perfect fairness of the award will be upheld.

"We remain, dear sir, your obedient servants,
(Signed) "HARTLEY & SUGDEN."

RATS IN VINE BORDERS.

THE following is in answer to "J. C. J. B.," page 74. With ferrets, dogs, and guns destroy all that come out; then reduce rotten turf to thin mud and run the holes full to within a foot of the surface; next ram in turf, in which stick plenty of broken glass edgewise, and put mortar and tar over every hole about the premises. A cat may also be secured to a wire, so that she can go the whole length of the house, whilst her kittens may be left free.—C. P., *Goldthorn Hill*.

M. GRIN'S SYSTEM OF PINCHING THE PEACH TREE.

THERE is always an eye at the base of the leaves, which, in fact, act as nurses to it, and as regards pinching they may be looked upon in the same light as a shoot. If, then, a leaf is pinched before it has attained its full size, the sap which would have gone to make growth will be diverted to the eye at the base of the leaf, and, according to the time of pinching and the vigour of the parts pinched, the eye will swell, or, while remaining latent, will undergo a change in its nature; it may even become a shoot.

It has been just remarked that at the base of every leaf there is at least one eye; indeed there must always be more, for every leaf is developed from a bud, and every bud before its expansion is composed of scales, which, being rudimentary leaves, have always at their base an eye, likewise rudimentary. This rarely pushes, but under some conditions its development proceeds, and flowers or shoots are the result. All this goes to prove that, according to circumstances and the treatment given to the various parts of a plant, different results can be obtained.

It must also be observed that when the leaves are pinched soon after they have appeared, but always before they have attained their full growth, not only the eye is formed and becomes larger, but it also establishes itself, so that, although the shoot may grow longer, it invariably holds its own after the leaf has been pinched. This is very important, especially as in luxuriant shoots the growth is so rapid, that the first leaves are so high up the shoot that its base is destitute of eyes, and then we have premature shoots. The whole of the lower part of the shoot being without eyes, it must, in pruning, be left very long, and the evil of this is all the more felt because the setting-on of these premature shoots is always very large and entirely destitute of even rudimentary eyes. By judicious pinching at the proper time not only can these drawbacks be avoided, but even in the year in which they are formed these premature shoots can be converted into fruitful

shoots—even into bearing shoots; nay, more, into triple-budded shoots, as shown in *fig. 3*.

Let us now apply these principles, and to render them more

comprehensible we will refer to engravings. All the eyes of the strong-growing parts of the Peach tree when they push have at first a large leaf (*B*, *fig. 1*), and further in two others



Fig. 1.

which are smaller, called stipular leaves (*A*). When we have to deal with premature shoots, as soon as these leaves appear half their length should be cut off, as shown by the dotted

lines *A, A* in *figs. 1* and *2*. Then, the point of the shoot not having been pinched, grows; and a similar operation is performed on the first two leaves which subsequently appear. If

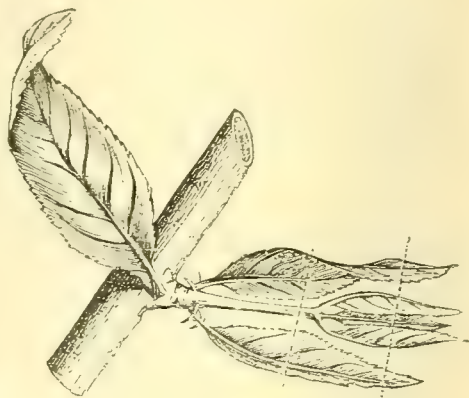


Fig. 2.



Fig. 3.



Fig. 4.

these are very distant from the first pair of leaves, and it is desired to prevent the shoot growing beyond that point, the whole is pinched, the two leaves and the growing point as well.

The sap, thus checked for a time, finds its way to the eyes, which become plumper, and in nearly all cases one or two shoots start from near the point where the shoot was pinched.

These fresh shoots are in their turn pinched at the second leaf, leaves and growing point as well, and the consequence is the base of the shoot becomes swollen and wrinkled, and soon the buds are developed as shown in *fig. 3*. Most frequently this only occurs at the third leaf.

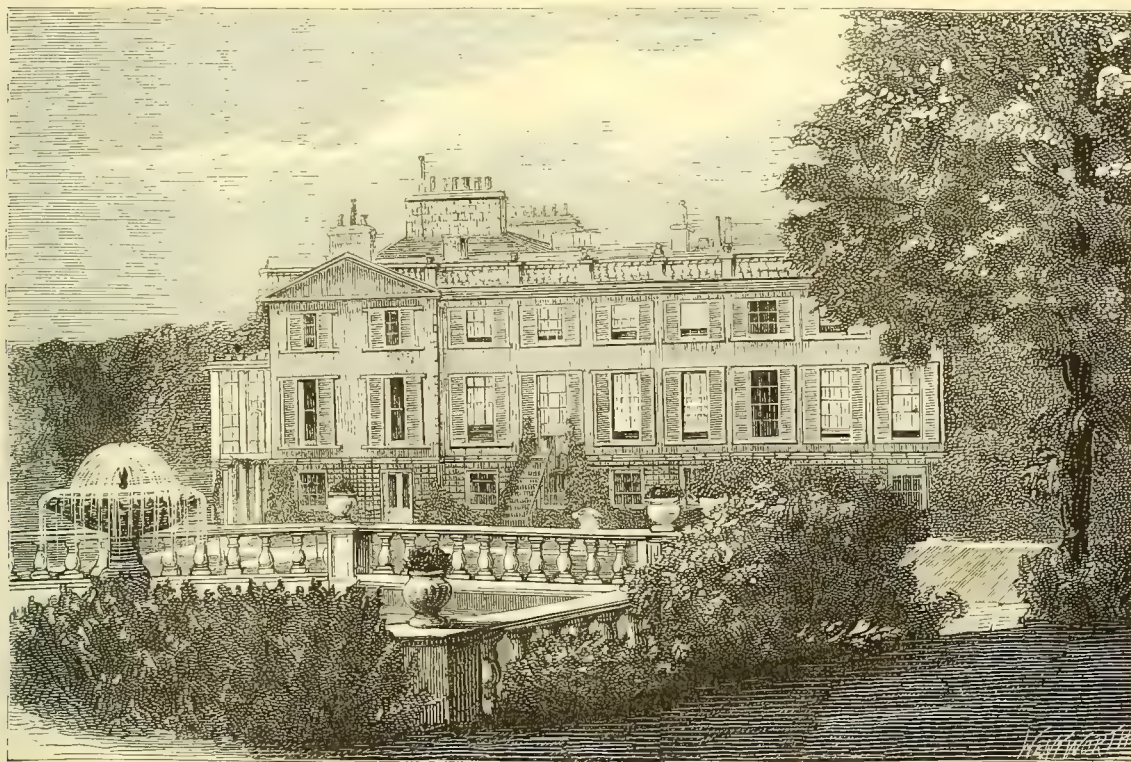
Buds of a very vigorous character, which would have produced premature shoots of a very undesirable nature, are not always converted into triple buds; but by the method of pinching described they become small fruiting branches bearing fruit buds towards their extremities, and good wood buds at their base. The latter produce in the succeeding year succession shoots, whilst the upper part may bear fruit (see *fig. 4*). When, on its first appearance, all the leaves of a young shoot are pinched, as at *e*, *fig. 1*, the shoot undergoes a still greater change.

M. Grin's system of pinching is not only easy of execution, but it is in accordance with scientific theories on the flow of the sap. Practically it amounts to this: Pinch or cut-in half the first leaves of the young shoot as soon as they appear, in order to establish and encourage the growth of a bud which is at their base, then when the shoot has grown to the length desired for the fruit branches pinch the last-formed leaves and the growing point; treat the secondary shoots or laterals in the same way, and if necessary cut some of them away.

By this mode of proceeding the production of fruit and succession shoots is rendered a certainty, and pruning is confined to cutting off anything likely to cause confusion in the tree, occasionally cutting back spurs, and, if needful, laying in here and there some branches to preserve the uniformity of the tree. —E. A. CARRIÈRE (in *Revue Horticole*).

PITFOUR, THE SEAT OF COLONEL FERGUSON.—No. 1.

ABOUT a mile to the north of the ancient village, and about thirty-two miles from the city of Aberdeen, in the centre of the fertile Buchan district, is Pitfour, the mansion, gardens, and pleasure grounds of which take a high position. Before



Pitfour House.

entering into other details, however, let me give a short sketch of its history, much of which is obscure.

The first possessor named in history is Fergus Earl of Buchan, in the twelfth century. His only child, Marjory or Margaret, after his death became Countess in her own right, and in 1210 married William Comyn, son of Richard Comyn, who at that time acted as Justiciary of Scotland, and who by this alliance acquired the earldom. The Comyns fought bitterly against Robert Bruce, who routed them, and their estates were escheated to the Crown. Subsequently Pitfour passed to George, Earl Marischal, and continued the property of his successors until the time of the George, Earl Marischal, who engaged in the rebellion of 1715, when it was confiscated by the Crown. It was afterwards sold, and again purchased by George, Earl Marischal, a son of the attainted Earl, in 1761. It was again sold in 1764 to James Ferguson, a Senator of the College of Justice, in whose family it has since continued.

On reaching the Mintlaw station, and passing along the Banff and Peterhead turnpike in a westerly direction, to the left is a flat plain of arable land laid out in tasteful crofts,

clumps of trees covering the slight eminences at the background. Passing an entrance lodge to the Aden policies, and leaving the Aden woods which skirt the road on the left, the visitor is confronted by two entrance lodges to Pitfour, one forming an entrance from the south, the other from the west. Entering by the south lodge, a long stretch of carriage-drive winds now under lofty trees, now through the open park, and passes along the side of the artificial lake, which covers an area of upwards of forty-five acres, and was formed by damming back the rivulet which flowed in the bottom of the valley. It is crossed by two stone bridges, that leading to the house being a magnificent granite structure of three arches. Here and there through the openings an obscure view of the mansion is obtained; but on journeying onward and passing the trees which shroud it, when it comes fairly into view it creates a feeling of its importance, and compels one to admire the good taste with which its site was chosen.

The mansion, of which the accompanying is a view, is built partly in the Grecian style of architecture. A row of stately Corinthian pillars surmounted by a costly conservatory,

forming a spacious verandah and portico, adorn the southern front, where the main entrance is. The mansion stands on the side of rising ground facing the south, ascending towards the back, and descending to the lake in front. The crest of the eminence is covered with old timber, whose spreading boughs intermingle, forming a sufficient shelter from the north. The spacious lawn, smooth and even, is studded with beautiful trees, and intersected with a broad walk leading due south from the main entrance to a part of the lake called the Waterloo Harbour, where several boats lie moored.

On the east side is the flower garden, laid out with a profusion of brilliant designs in lozenge-shaped, oval, triangular, square, and other tastefully-formed parterres of choice bedding flowers. Here and there are beautiful specimens of sculpture—the most conspicuous is a model of Venus; and to the east of this garden is an elaborate fountain surrounded with decagon balustrade, surmounted at each angle by a beautiful vase filled with Geraniums. A gently undulating walk, flanked on each side by a row of stately Beech trees, whose bending boughs meet together at the top, forming a continuous lofty verdant arch, leads from the east side of this garden in a straight line to the private chapel on the brow of the eminence, softly nestled among the tall and spreading trees. To the west of this, on the brow of the same eminence, stand the carriage sheds and stable. The centre building is surmounted by a large wooden dome, which can be seen above the stately trees from a great part of the grounds. Farther to the west on a continuation of this eminence is the spacious riding school, 130 feet long by 50 feet wide, forming a convenient place of shelter and entertainment to the many picnic parties which visit Pittfour, and which is always at their disposal.

On the west side of the mansion is a lovely piece of pleasure ground. Proceeding westward by a winding drive from the house we round the west end of the lake, pass along its south bank, and arrive at a pretty little temple constructed on the model of the Temple of Theseus at Athens, and having thirty-four granite columns. The interior is fitted-up as a fresh-water bath. This overlooks the Temple Garden situated in a natural groy opening to the south. The north side, constituting the dam by which the lake is formed, is profusely covered with a mass of Rhododendrons, equalling anything of the kind in Scotland, and extending round the east side, which rises abruptly and is crested by a clump of wood descending to the south. These two sides have a very picturesque appearance. The west side also rises abruptly, descending to the south, and down it the waste water from the lake is carried in a miniature precipitous descent. The water emerges from the lake through a small tunnel, with its external opening surrounded with Rhododendrons, which serve to conceal the masonry. Over this opening, embosomed amid these shrubs, in a reclining position, is a beautiful female figure in freestone. The water falls a height of between 20 and 30 feet in eighteen stages. Each stage is formed as a basin, the water lapsing with a gentle murmur from basin to basin into a pond. This bank is beautifully clothed with creeping plants, shrubs, and trees.—J. B.

VIENNA UNIVERSAL EXHIBITION, 1873.

At a Meeting held at Marlborough House on Thursday, the 18th July, 1872, Her Majesty's Commissioners for the Vienna Exhibition, in accordance with the powers vested in them by the Royal Commission, appointed—

His Serene Highness Capt. Count Gleichen, R.N.,

The Right Hon. Hugh C. E. Childers, M.P.,

Sir Anthony de Rothschild, Bart.,

Sir Richard Wallace, Bart.,

Sir Watkin Williams Wynn, Bart., M.P., President of the Royal Agricultural Society of England, or the President of the Royal Agricultural Society of England for the time being,

Sir Francis Grant, President of the Royal Academy of Arts, or the President of the Royal Academy of Arts for the time being,

Thomas Hawksley, Esq., President of the Institution of Civil Engineers, or the President of the Institution of Civil Engineers for the time being,

to be Royal Commissioners in addition to, and together with them, the Commissioners appointed on the 29th April, 1872, for the purpose of promoting the success of the Universal Exhibition to be held in Vienna in 1873.

This Exhibition will take place in buildings specially erected for the purpose in the Imperial Park called the Prater: it will be opened on the 1st of May, 1873, and closed on the 31st of October of the same year.

The following is the classification adopted for the objects exhibited, separating them into twenty-six groups:—

- Group 1, *Mining, Quarrying, and Metallurgy.*
- Group 2, *Agriculture, Horticulture, and Forestry.*
- Group 3, *Chemical Industry.*
- Group 4, *Articles of Food as Products of Industry.*
- Group 5, *Textile Industry and Clothing.*
- Group 6, *Leather and Indianrubber Industry.*
- Group 7, *Metal Industry.*
- Group 8, *Wood Industry.*

Group 9, *Stone, Earthenware, and Glass Industry.*

Group 10, *Small Ware and Fancy Goods.*

Group 11, *Paper Industry and Stationery.*

Group 12, *Graphic Arts and Industrial Drawing.*

Group 13, *Machinery and Means of Transport.*

Group 14, *Philosophical Instruments, Surgical Instruments.*

Group 15, *Musical Instruments.*

Group 16, *The Art of War.*—This group includes all objects and contrivances belonging to the equipment of the army and the relief of the sick and wounded.

Group 17, *The Navy.*—This group comprehends everything relating to the navigation on the sea, on lakes and rivers, ship-building, the fitting-out of ships, the construction of harbours and light-houses, life-boats, and salvage.

Group 18, *Civil Engineering, Public Works, and Architecture.*—In this group will be exhibited the plans and models of executed or projected works belonging to roads and railways, aqueducts, irrigation, drainage, reservoirs, canal and river embankments, private dwellings and cottages, and public buildings (houses of parliament, theatres, hospitals, bathing establishments, public wash-houses, &c.), and also methods of lighting, ventilating, and warming.

Group 19, *The Private Dwelling-house, its inner arrangement and decoration.*

Group 20, *The Farmhouse, its arrangements, furniture, and utensils.*—In these two groups it is expected that the different nations will exhibit their peculiar forms and actual conditions of domestic life.

Group 21, *National Domestic Industry.*—This group is intended to make known the variety and abundance of valuable designs and forms which the productions of national domestic industry, such as ornaments, potteries, textures, &c., contain.

Group 22, *Representation of the Influence of Museums of Fine Arts applied to Industry.*—The object of this department is to show the means by aid of which the modern museums of fine arts applied to industry—viz., the South Kensington Museum in London and the similar museums in Vienna, Berlin, Moscow, &c., endeavour to improve the public taste and diffuse artistic education.

Group 23, *Art applied to Religion.*—This group will contain all the products of industry and the works of fine arts which are employed in public worship.

Group 24, *Objects of Fine Arts of the Past, exhibited by Amateurs and Owners of Collections (Exposition des Amateurs).*—This group has as its aim to enable the visitor to see an exhibition of treasures of private collections of works of fine arts, which are usually accessible only to a limited few, thus giving students and others engaged in artistic pursuits an opportunity to gain new ideas.

Group 25, *Fine Arts of the Present Time.*—This group will contain works of fine arts produced since the International Exhibition of London in 1862.

Group 26, *Education, Teaching, and Construction.*—This group will contain—

(a) A representation of all objects and inventions which can assist in the education of a child, and contribute to its physical, intellectual, and moral development, from its birth to its entrance to school;

(b) Educational and school matters, from the elementary school upwards to the technical school and the university;

(c) The entire system of instruction and culture, so far as it can be brought into view by products of literature, of the public press, societies, public libraries, graphic and statistical records.

TRIALS OF MACHINERY.—There will be competitive trials of machinery, apparatus, processes and methods of work of different dates, showing their successive improvements; for example: sowing machines, weaving machines, telegraphy, photography, &c. An attempt will thus be made to give an epitome of the history of inventions. In addition to this, an attempt will be made to place side by side the productions of machines and handwork, and to show how in some cases machines have superseded handwork, while in others they have aided and increased its products.

HISTORY OF INDUSTRY.—By exhibiting also analogous products of industry, manufactured at different epochs, with their relative prices and with samples and models, it is intended to show the growing power of different industries, their dependence on the changes in taste, and their influence upon taste, as well as their importance in national economy at different epochs, thus exhibiting the history of industry.

CONVERSION OF WASTE INTO USE.—To show by a retrospective view the influence of science on the progress and development of manufactures there will be exhibited the gradual conversion of waste into use, or the increase in the employment of the former, by comparing the waste with the articles manufactured therefrom, and also the intermediate products, so far as these are the result of inventions and discoveries since the first International Exhibition of London in 1851.

HISTORY OF PRICES.—A further aim in this Exhibition is to give the history of prices; to exhibit from the chief districts of production the prices of more important articles, going as far back as possible, and placed side by side in average periods of five years, and illustrated by samples and specimens.

COMMERCE AND TRADE.—To show the international exchange of products, a representation of the commerce and trade of the world will be formed. For this purpose samples and specimens of the articles of trade and commerce of all the important harbours and seaports are to be exhibited.

On each sample will be marked its origin, its destination, its price and value, the quantity of import and export, &c.; along with these will be shown statistical and graphic tables, the movement of the navigation and commerce of each seaport during the last ten years.

STATISTICAL TABLES OF PROGRESS SINCE 1851.—The intention just expressed of aiding the study of this Exhibition by the help of statistical and graphical tables, will be carried into effect in all the departments of the Exhibition, by showing the industrial progress made by each country since the first International Exhibition of London in 1851, from official records. For example: There will be exhibited tables of increasing areas of cultivated soil, the annual quantities of agricultural products, the value of land, the interest on money, the traffic and capital of railways, the increase of population, &c., as they have appeared at each of the periods of subsequent International Exhibitions—viz., Paris, 1855, London, 1862, Paris, 1867.

Thus there will be shown the productive powers of different nations in the respective departments assigned to their products in the Exhibition building.

On the other hand all particulars of the different articles to be exhibited, such as: The name of the exhibitor, the description of the objects, the price (which the exhibitor is at liberty to attach if he please) may be shown on labels attached to each article.

In the same manner all other informations of public interest the exhibitor may wish to have published, such as the history and importance of the establishment, its progressive development, its annual production, may also be written or printed and annexed to the objects exhibited; in contradistinction to former international exhibitions which confined these informations to the printed catalogue.

COMPARATIVE TRIALS OF NEW INVENTIONS WITH LECTURES.—For the purpose of rendering this Exhibition especially instructive and educational, it is intended to make comparative trials and experiments on processes new or hitherto little known. The value of objects exhibited will be submitted to practical tests. For example: Experiments will be made regarding the production of wines (application of the hydro-extractor, heating of wines, &c.), trials with machine tools of every description, application of the electric light, utilising of aërostation (captive balloons, &c.), experiments with explosive materials, with steam ploughs, transmission of power by wire ropes, locomotives, engines on common roads, steam fire engines, &c.

Lectures will be given on these subjects in a special lecture-room of the Exhibition, and international prize problems issued, as, for example, on the best implements for the cultivation of Beetroots for the fabrication of sugar.

TEMPORARY EXHIBITIONS.—Arrangements will be made for a series of temporary international exhibitions of such articles which by their nature do not admit of an exposition of long duration. They will comprise:

Living animals (horses, cattle, sheep, pigs, dogs, cats, fowls, game, fish, &c.);

Poultry, venison, butcher's meat, pork, &c.;

Dairy produce; milk, cheese, &c.;

Vegetable produce; fresh fruits, fresh vegetables, flowers, plants, &c.,

Living plants injurious to agriculture and forestry.

INTERNATIONAL CONGRESSES AND CONFERENCES.—During the Exhibition various international congresses and conferences will be arranged for discussing important matters to which either the Exhibition itself may give rise, or specially selected as subjects of international discussion.

More especially there will be international congresses of men of science, teachers, and artists, physicians, directors of museums of fine art applied to industry, teachers of drawing, architects, engineers, representatives of chambers of commerce, economists acquainted with the questions relative to banking and insurance, of agriculturists, foresters, mining engineers, &c.

Among questions subject to such discussion will be the following:—

The question of intellectual property, of the improvement of

public taste, of the promotion and diffusion of arts of design, on economy of transport, on obtaining the highest efficiency of machines, on the extension and development of forest statics, on reducing the price of food, whether by increased production, better organisation of markets, reformed cookery, or new methods of preserving food; on the nourishment and early rearing of an infant, on early healthful training and gymnastics, on the exertions of our time in regard to the curing of deformed children, on the education of woman and improvement of her social condition.

AGRICULTURE, HORTICULTURE, AND FORESTRY.—(a.) Plants for food and physic (excluding fresh fruits and vegetables, which are to be the subjects of temporary exhibitions). (b.) Tobacco and other narcotic plants. (c.) Vegetable fibre (as Cotton, Flax, Hemp, Jute, China Grass, &c.); and other plants of commerce in their raw state. (d.) Cocoons of silkworms. (e.) Animal products in a raw state (skins, hides, feathers, bristles, &c.). (f.) Wool. (g.) Products of forestry (timber, wood for cabinet work, tanning substances, resin in a raw state, dyeing woods, barks, charcoal tinder). (h.) Peat and its products. (i.) Manures. (k.) Drawings and models of objects used in agriculture, horticulture, and forestry; farm maps. (l.) Works of the experimental stations, woodland and forest doom books, statics of forests, &c. (m.) Processes and inventions for producing, transporting, and storing the above-mentioned products. (n.) Plans of gardens, drawings and models of horticultural implements, hothouses, conservatories, irrigation, &c. (o.) New methods of horticultural cultivation. (p.) Statistics of production.

All communications to be addressed to Philip Cunliffe Owen, Esq., Secretary, Vienna Exhibition Offices, 41, Parliament Street, London, S.W.

WORK FOR THE WEEK.

KITCHEN GARDEN.

An unquestionable advantage attends the practice of systematically keeping the surface of the ground loose and open about growing crops, and this recommendation is more particularly applicable to stiff loamy garden lands. From inattention to this apparently simple matter it is evident that both the absorption and evaporation of moisture must be impeded, and thus the advantage of atmospheric influences considerably diminished. The hoe at this moment, for the purpose above mentioned, and the complete extirpation of weeds, should be constantly employed. The decline of some of the earlier quarters of *Beans*, *Cauliflowers*, *Peas*, and *Spinach* will afford the opportunity of making further additions to the stock of *Broccoli*, or of planting a main crop of *Coleworts*; in either case the ground should be dug and manured. A thorough examination of the whole stock of *Winter Greens* should take place, and all vacancies should be filled up. The weather favours the operation of transplanting, and it should be remembered that the present is a period of the year most important for completing arrangements for the due supply of vegetables throughout the winter. *Celery* planting ought by this time to be finished, and active preparations commenced at once for providing a due proportion of *Endive* to last the winter; it may be planted with advantage on raised beds. A piece of ground favourably situated must be held in reserve for a sowing of *Onions*. The tops of the main crops of *Onions* had better be laid down if they are inclined to be too rank, going over the bed with a wooden-headed rake, and pressing the tops down sufficiently to check further growth. *Spinach* sufficient for the winter supply should be sown without further delay. Sow *Radishes*, *Lettuce*, and other salading. Collect droppings for *Mushroom beds*.

FRUIT GARDEN.

Keep the shoots of *Apricots*, *Plums*, &c., closely tacked to the wall, and afford the fruit as fair an opportunity of exposure as possible. Trap earwigs and ants about *Apricot* trees. See to the speedy formation of *Strawberry beds*.

FLOWER GARDEN.

The active growth of plants in the flower garden, encouraged by the prevailing humidity of the weather, causes much work when neatness is required. *Verbena* beds require pegging. *Scarlet Pelargoniums* are particularly succulent, and presenting such a large mass of foliage, are particularly liable to be injured if not staked securely. *Dahlias* require similar attention. Climbers, too, must be constantly looked to. Now that the effect of the present arrangement of colours in beds can be fairly seen, there is an excellent opportunity for noticing any mistakes and determining upon the arrangement for next season, and this should be done without delay. When it is decided with what each bed is to be occupied next season, a

plan of the garden should be made, writing the names of the plants on the beds according to the arrangement decided upon. This will be of the greatest service in showing at any time what quantity of each kind of plant has to be propagated. Propagation of stock for next season must soon be commenced, and carried on with expedition, so as to secure strong, well-established plants before winter, and without the necessity of keeping them so close or warm as to induce weakly and watery growth. It cannot be too often repeated, that to be able to winter bedding stock safely with ordinary care, the cuttings should be put in sufficiently early in the autumn to allow of their being well established and fit to be exposed to the open air by the middle or end of next month. Begin with those that are found to be the most tedious to propagate, and prepare for winter. Some florists layer the strongest shoots of Pinks, and pipe the second crop of weaker ones, contending that the latter root more freely. Be this as it may, whether pipings or layers, those intended for next year's blooming are better planted out now, or at least as soon as they are fairly rooted. The beds should be made of well-decomposed dung, sand, loam, and leaf soil in equal parts; in fact, they ought to be rich, as there is little danger of the Pink discolouring. I prefer planting at this time, because the plants become well established, stand the winter better, and lace much more correctly than when the planting season is deferred. The surplus stock may be put out on store beds. A second crop of pipings may be put in where it is desirable to increase the stock. Finish layering Carnations and Picotees as speedily as possible. Should the weather set in dry, attention must be paid to regular watering. Those sorts which are difficult to root should have a flat pebble placed immediately over the incision. I have found this extremely beneficial in hastening the emission of fibres. Some growers will now take off their rooted offsets of Auriculas; this should be carefully done. They would be best placed round the sides of pots and set in the shade. Seedling Polyanthus which have not been already pricked out should be immediately attended to. A north border is an excellent situation.

GREENHOUSE AND CONSERVATORY.

Examine the stock of pot plants, in order to see that nothing is suffering from want of pot room or other attention necessary to assist them in making young wood for flowering next season. Also see that proper care is bestowed on late-growing plants in borders, for while in active growth more water will be necessary, and insects will be more troublesome than in the case of plants at rest. Look after Luculias and keep them clear of their great enemy black thrips; give them plenty of water at the roots, and an occasional supply of clear weak manure water may be afforded to old plants that may not be growing freely, until they have made plenty of wood to insure a good display of flowers. Manure water, however, must not be given to young specimens in vigorous health, as in that case it would only induce too gross a growth, a condition in which they seldom flower profusely. In order to secure fine heads of bloom from this plant it should be allowed a few weeks of comparative rest, after, say, about the middle of next month, keeping the roots rather dry, and exposing the plants as freely to air as can be done without injury to the foliage or the health of their neighbours. *Brugmansia sanguinea* is also a useful plant for winter and early spring flowering when managed so as to have it pruned, rested, and starting into growth about this time. See that large specimens are not allowed to become too dry at the root after they have set their buds, for their shedding the latter is often due to this cause. Young vigorous plants, however, frequently require to be watered rather sparingly at this period to prevent their making a second growth. *Cinerarias* for early flowering should now be growing freely, and should be shifted when necessary, for if they are to form large specimens for flowering in winter they must not be permitted to sustain any check. Plants arranged out of doors must be frequently examined and carefully secured against all chances of injury from ungenial weather. See that *Ericas* are properly, but not excessively, supplied with water. Continue a system of stopping and training with young plants intended for specimens.

STOVE.

In the stove such of the inmates as are intended for the decoration of the conservatory in autumn and early in winter should be carefully looked over, shifting any that are likely to want more pot room without unnecessary loss of time, so as to have the pots well filled with roots before the flowering season. Also keep the shoots tied out rather thinly, and expose the

plants to as much sunshine as they will bear without scorching their foliage. Give weak liquid manure water to young growing specimens. Maintain a moist growing atmosphere, and ply the syringe vigorously upon any plant at all infested with the red spider. With respect to Orchids, encourage any backward plants with plenty of heat and moisture while this can be safely done. See that specimens on blocks and in baskets are properly supplied with moisture at the roots; and to prevent any mistake, handle every plant at least once a-week, and immerse those found to be dry in tepid water until the material about their roots is well soaked. Syringe lightly morning and evening, and sprinkle the floors, &c., frequently, so as to keep the atmosphere thoroughly moist.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

EVERY piece of ground, as soon as it was cleared of Peas or other crops, was filled for the winter. We sowed the main crops of Cabbages, and a few Cauliflowers, Onions, and Spinach for succession. We prefer sowing the main crops from the 15th to the end of the month. Rats have been troublesome on our Peas and small fruit, especially Gooseberries. We catch and trap numbers of them, but they do not much diminish in force. But for seeing them dead we should be apt to think that some of our men had learned a lesson from the great naturalist Waterton, whose father paid so well for the tails of rats, that he took the tails and let the animals go to keep up the paying stock. Others catching tail-less rats, the trick oozed out.

Cucumbers.—Now is a good time to sow for winter fruiting. They become strong and healthy before the short days arrive.

Onions have grown remarkably this season, and perhaps we have never used fewer of them. If things are overabundant they are less valued.

Dwarf Kidney Beans out of doors, owing to the refreshing rains, have been unusually good, and there is no vegetable more enjoyable and nutritious when well cooked. We lately saw in a large place some dishes enough to keep anyone from touching them. Would that some experienced person would give simple directions on cooking vegetables, so as to present them at table in an attractive healthy condition. We have seen large dishes of what ought to have been beautiful tender Cabbages dirty in colour, swimming in the water in which boiling had been attempted, and every bit, instead of being soft and melting, as tough as so much leather.

Artichokes, Globe and Jerusalem.—Where Globe Artichokes are much admired, the crop will be prolonged by giving the plants some good soakings with manure water. We think this vegetable, well done, is one of the best for a quiet conversational dinner. No one can get over them in a hurry. We are often surprised that Jerusalem Artichokes are not more used for covers; they would give shelter, and the pheasants, if not overfed, will turn up the tubers for themselves. When well fed on better materials, as Barley, Indian Corn, &c., we find that pheasants will not leave the best for the Artichokes, and thus we have noticed frequently that fine plantations of it are left untouched. In other places, where there was less in the way of feeding, quarters of this Artichoke in the woods were almost cleared out every winter. We may here state that in many places, owing to the same cause, the berries of the Privet and the Evergreen Berberry would be greedily cleared off, whilst in other places they would remain untouched. No doubt when grain was obtainable it was more palatable and nourishing too.

FRUIT DEPARTMENT.

The work was to a great extent a repetition of that described in recent notices, as nipping, pruning, gathering, and watering. In-doors, as all our fruit houses have as yet to be plant houses, we try to remove the plants from them as the fruit approaches maturity, and then when it is gathered we begin to introduce them again. We do not advocate the plan, but we have no alternative. Then, as soon as pruning and cleaning takes place, the house is filled with plants that will stand a low temperature, so that the main fruiting plants of the house shall not be excited before we want them. There are but few places even now where a house can be kept for a definite purpose. That, however, is what ought to be done when high culture becomes a matter of first consideration. Take Strawberries, for instance. Growing them early in every available house gives much extra labour, and there is considerable trouble in

keeping the plants healthy and clean when stuck everywhere on moveable shelves. In a lean-to Peach house, for instance, we had four lines of Strawberry pots, but it would be true economy to have a Strawberry house, lean-to or span-roofed, with shelves some 18 inches from the glass, and then when not wanted for Strawberries it would do for many other bushy dwarf plants. We know full well that the temporary crops of Strawberries in forcing houses often pretty well pay the expenses of managing the main crop of Peaches, Grapes, Figs, &c., but the greater trouble required for keeping down insects acts as a counterbalance, so that in the end a separate house would be the truest economy. We may rest assured that this last word will be more than ever considered in gardening and all estate management, and we feel certain that often more ground and more glass room would be true economy, instead of attempting so much and the necessary crowding in little room. The inevitable moving often in the latter case involves a great amount of what to the uninitiated is unseen labour.

ORNAMENTAL DEPARTMENT.

Walks.—The simplest hints are sometimes valuable. Some of our walks were not so neat as usual, the season has been so favourable to the growth of weeds. We durst not use salt, as numerous visitors might have taken the salt on their boots and left dark traces on the lawn. We therefore resorted to a process similar to what our mothers and grandmothers would have termed "a lazy blacking"—that is, giving our boots and shoes a clean without taking them off our feet. Now this, though not to be commended, was just as in the case of the walks better than doing nothing at all. As respects the walks, those which were a little dirty had the weeds from 1 to 2 inches high pulled out; the smaller weeds were scraped with a hoe lightly, and were swept up with a broom, and then a little sandy gravel from which the stones were riddled was sprinkled very thinly over, so that a single load did a great length of yards. The broom being passed over, and then the roller, the walks looked as fresh and neat as could be to everyone who did not know that beneath this light surfacing there might be numerous little dots of weeds though not more than an eighth of an inch in height. In emergencies it is well to know what will suit the best, and give at the smallest labour and outlay a fresh, clean, finished appearance. Dirty walks will ever spoil the finest pleasure grounds.

Ever long we shall salt the worst of these walks, and fresh sprinkle, and then until next summer we shall have no more trouble with them. We object to salt on smooth walks, unless this sprinkling with fine sandy gravel is given, as otherwise the walks are apt to be too damp all the winter through. We prefer salting when the weather is likely to be dry. It then acts slowly but surely on the weeds, and the slight sprinkling of fine sandy gravel hides it, and binds up with it. We find it best to sift this sandy material before putting it on, as it saves raking off any stones afterwards. We did one of our main walks thus two years ago, and with the exception of some little Daisies and other weeds for 6 inches in width at each side, we have not seen a weed on the main central part of the walk since. Of course, we shall let well alone, and merely salt and fresh surface a few inches along each side, and roll it down along with the rest of the walk. Smooth walks have their advantages, but they are apt to stick in damp weather. Roughish gravel walks are unpleasant to walk on, but in all weathers the walking will be clean. Salt without surface-dressing afterwards will make the smooth walk soft in wet weather. Salt applied to the rough walk will make it gradually soft and fine, as nothing will more effectually break up the little stones and pebbles than salt. Let it be remembered, however, that it will soon corrode the finest stonework if it touch it. We know of one fine stone-pillared balustrade that is now mouldering away, because salt had been liberally used on gravel at its base. The salt rose through the wall and balustrading.

Transplanted Trees and Shrubs.—The frequent showers have saved much trouble with these. In the spring we mentioned removing some large Chestnuts with anything but the most suitable machinery, as our two-wheeled timber gig was not wide enough between the wheels to admit the ball and roots conveniently. These trees have had nothing done to them since they were replanted and fastened in the mode described, as several times, when we thought we should have to water them, a heavy shower came, and in the multiplicity of matters we felt glad to let them alone. One tree looks as if it would have a little struggle; all the others have done well, and that though we did very little in the way of top-

pruning. We hope that even the worst-looking tree will do well. But if opportunity had offered we should have liked to have given each of these trees some eight or ten gallons of water in the hottest days of July. The right time to give a soaking at the roots is when the weather becomes so warm as to heat the soil, and that heat encourages fresh and free rooting. If we should have a moist August it will hardly be necessary to water these transplanted trees at all; but we expect that ere long we shall have to give them one watering. The trees were thinned-out where they would have soon encroached on each other if left standing. Some of the largest required four horses to pull them on the timber gig to their destination, so we must not let them suffer from want of a little water if necessary. We should, however, be pleased if they would do with what the skies give them. Such transplanting is only valuable for giving a present effect, and where the trees are to be had at no great distance. We can say little as to the economy of the mode, as whatever plan is adopted, labour and painstaking are essential to success.

Cleaning Flower-beds.—The heavy rains made this essential, in order to keep up a good display. Trusses of Calceolarias and Scarlet Geraniums, if done flowering, cannot be removed too soon. It frequently happens, however, that the flowers in the centre have gone, whilst there are plenty of fresh blooms at the side of the truss, and plenty of flowers beneath waiting their chance for expanding. In such a case, the best plan is to nip out the exhausted flowers either with the fingers or the point of a small knife. Some kinds of Pelargoniums want the knife for this nipping process; other kinds are so manageable that the faded flowers fall into your hand as soon as touched. However done, this nipping-out of decayed flowers makes a vast difference in the appearance, lighting up the row or bed remarkably. We have several long rows of the white Madame Vaucher Pelargonium; the continued rains acted on the centre of a great many fine trusses just as if a crock or a piece of wet cloth had been left on each of them for two or three days. When that discoloured and dirty part was nipped out, it was amazing how bright the rows looked for several days afterwards.

The best time to do this nipping is just before rain comes, or is expected. The rains, if not excessive, do little harm to fresh-opened blooms. It is the older ones they tell upon, and the colour washed from them often injures the fresher blooms. Beds may thus be picked at any time; but for the above reason it is best every way that it should take place before instead of after heavy rains.

Even amid the rage and craze for cut flowers in rooms, which we prophesy will ere long be as damaging as bad drainage and bad ventilation, if we had our way this nipping-out of decayed blooms would be all that should be taken from the beds in a neatly-kept flower garden which it is desired should look well. All cut flowers we would take from a reserve ground.

We can well understand how depressing it is to a gardener to find that his favourite bed has been almost spoiled by the flowers having been gathered. We say nothing of the right, that is undisputed. A lady or a gentleman may cut to pieces the most valuable plant in the garden, or cut off every truss of bloom in a prominent flower-bed; but we may be allowed to question the prudence of the proceeding, and to question still more if such a practice is not one of the most effectual that could be adopted for destroying everything like enthusiasm in a gardener; and without something like earnest enthusiasm no man will ever strive to do much in any department of life.

Now is a good time for a little regulation of the plants in beds, and the rains have rendered it necessary in all cases of free growth; a peg here, and a concealed stick there, will do much to fill gaps, and present a uniform outline and appearance. We know all about the satirical remark, "Just so many neat pincushions." Well, we would rather have the neat uniform pincushion than plants of all heights, some thick and others thin, just as it may happen. Depend upon it that the neat and formal will ever triumph over the scattered, the thin, and the untidy. Of course, where the plants are grown in beds on the gardenesque plan, with much ground to be seen, and the plants individually small, so as to be seen separately, the treatment may be different from what it ought to be when every bed is a vigorous mass, showing no earth, but healthy blooms and foliage.

Owing to the rains we find many of our different Pelargoniums have grown unusually strong, and produced larger leaves than we liked. So we thinned out a good many of these larger leaves, taking them clean off, when removing some

of the faded flowers. This check to free growth greatly assists free flowering, by giving more light and air to the stems and the points of the plants. In a month or so we shall nip out the terminal bud of the shoots, as then there will be as many small flower-stems as will have a chance to open and perfect themselves in the autumn.

We find we shall be unsuccessful in again obtaining fine wreaths and edgings of blue Lobelias. The four-footed intruders make the stout plants less and less every night, and the blue wreath is out of the question. We fear, notwithstanding our love of the Lobelia and the ease with which it can be managed, we must fall back on the dwarf Ageratums, but then they have not the neat habit of the Lobelia.—R. F.

TO CORRESPONDENTS.

N.B.—Many questions must remain unanswered until next week.

ROSES MILDEWED (*L. J. C.*).—Your Rose has been attacked with orange fungus by the smear on the paper. Black blight or fungus occurs out of doors only, as it is never, I believe, seen under glass. It is probably favoured by atmospheric changes. Stir the ground round the plants. I keep the hoe going among my Roses, it promotes root action and health. Sponge your mildewed leaves with vinegar, it is a complete cure. Sponge your orange-fungus leaves with a solution of blue vitriol. Dissolve 2 ozs. in hot water, and add two or three gallons of water. The Roses were never finer here than they have been. I have but little fungus of any kind.—W. F. RADCLIFFE.

ROSE LEAVES (*A. C.*).—The leaves of your *Maréchal Niel* Rose are scorched. You ought to shade the house during this hot season. Inequalities in the thickness of the glass or even a speck in it will form a lens which condenses the rays of light on particular spots, and causes such scorching of the leaves as your plant has suffered.

CUCUMBERS (*J. W., Longton*).—The insect is the mealy bug. Syringe them with a solution of Gishurst compound, 2 ozs. to the gallon of water.

WEEDS ON GRAVEL WALKS (*C. W.*).—A solution of arsenic is used for destroying moss and weeds. It is used sometimes to destroy worms in lawns.

EXHIBITING ROSES (*Truefoyle*).—We think that supporting the trusses with small stakes was no infringement of the ordinance, "Trusses to be shown with the leaves and buds as cut from the tree; any addition, even of a leaf, will disqualify."

SUGAR IN VEGETABLES (*Tento*).—We think that no physician could have intended his dictum prohibiting the eating of "any vegetable containing sugar," to be taken literally—for scarcely a vegetable that is edible is free from sugar as a constituent. Wheat, Potatoes, Beans, Peas, Onions, Mushrooms, &c. contain sugar of some kind. The physician intended, we think, that fruits and roots in which sugar predominates ought to be avoided. Thomson's "Chemistry of Organic Bodies—Vegetables" contains the most analyses; Johnston's "Lectures on Agricultural Chemistry" also contains many.

BOILER MAKERS AT BIRMINGHAM (*Inquirer*).—The names of all who exhibited are in the catalogue of the exhibition.

STUTTON'S EARLY RACHEORSE POTATO (*Rustic*).—This, we believe, is the earliest Potato. It has a somewhat curled foliage with stalks of a yellow tinge. On some soils it blooms freely, while on others a bloom is never seen.

GRAPES SHRIVELLING (*A. A.*).—You must expect the Grapes to shrivel now, in a vinery from which the first bunch was cut on the 17th of May. Excessive dryness in a vinery border is not desirable. We give the roots a thorough soaking with water when the Grapes begin to colour, the border seldom requires any more until all the Grapes are cut. When they are required to hang, say two months after they are ripe, and if the weather be excessively hot and dry, we would give a good watering should the Grapes show signs of shrivelling. What you read in the "Vine Manual" no doubt had reference to keeping Grapes at a dull period of the year. In winter you cannot keep the atmosphere too dry; no water whatever ought to be spilt about. In the middle of summer it is often necessary to sprinkle the border and paths once a day; the forenoon is the best time. (*Lib.*)—In your case, as the Grapes are scarcely ripe, we believe the cause will be found in over-dryness at the roots. Inside borders require a very large supply of water. In such seasons as this, the outside would not require any artificial watering. Should the inside border be over-dry, which you can ascertain by examining it to the depth of a foot, we would water it at once.

SEEDLING TRICOLOR GERANIUMS (*Lambourn*).—The colours of the leaves and the delicate pink flowers are all excellent, and a good combination for a light bedder. If the habit of the plant is dwarf it will be an acquisition.

GRUB ON CHERRY AND OTHER LEAVES (*J. Mackenzie*).—Your "villainous vermin" are slimy grubs, the larvae of a sawfly, *Selandria ethiops*. Dusting with slaked quicklime destroys the grubs.

VARIEGATED PRIMROSE (*C. B., Godalming*).—It is not easy to judge of the value of a variegated-foliage plant from seeing one leaf, and as that was quite dried-up the difficulty was increased. No doubt a Primrose with finely variegated foliage would be highly ornamental.

LASIANTRA MACRANTHA (*J. B. C.*).—The excrescences are not uncommon in Melastomaceae. They appear to be a hypertrophy either of the hairs or cuticular cells. They are accompanied by an obscure sporotrichum, but whether caused by it or not we are unable to say.

WORK ABOUT FERNS (*X. Y. Z.*).—There is a large folio edition of Moore's "Nature-Printed Ferns," as well as that in 8vo., and you could not have a better book for reference.

CARNATIONS—PICOTÉES—PINKS (*Trethowel*).—The distinctive characteristics have long been settled. If you enclose five postage stamps with your direction, and order "Florists' Flowers," the book will be sent to you by post. It contains the characteristics and details too long for us to reprint unless absolutely necessary.

WHITE FRONTIGNAN GRAPES CRACKING (*A. E. D.*).—This Grape does not crack in the way you describe it. We fancy you have the Chasselas Musqué, a variety of which the berries are very liable to crack. The remedy is to

allow the Vines to carry a good crop of fruit, and let the roots be rather dry when the fruit is ripening. Should some of the berries still crack, cut a notch in the branch below the bunch. This will check the flow of sap to the berries, and in all probability prevent it.

ALPINE GARDEN (*M. B.*).—We expect an article on this from one of our correspondents, and will give it in an early number.

SULPHOZONE (*G. Walpole*).—It has not been advertised, and we conclude, therefore, that it has not been prepared for sale.

PLANTING A WATERCRESS BED (*C. M. A.*).—As the name implies, water is essential for the success of this favourite article of food, and if you have a stream you may arrange any extent of ground into broad, shallow ditches if the land is perfectly level—say ditches of 12 feet wide, with 4-feet paths between. The weeds having been all removed and the bottom made smooth, and with but a slight fall to one end, the water may be turned in from the highest point, and the plants put in. Usually cuttings or slips are planted with a dibber, or they may be laid in their places and held there by a stone or any such contrivance. The planting may be done at any time when there is water, and to make the plants more accessible a low rail may be fixed only a few inches above the water-line, on which a plank may be taken up to gather them when wanted. This is better than a fixed plank, the latter taking-up so much room. A similar contrivance in planting may be adopted on a smaller scale, if only a few Watercresses are wanted for private use. Although we prefer running water to that which is stagnant, very good Watercress is often met with in the latter. We are not sure that the presence of impurities in the water is any injury to vegetables that grow above it, but clear spring water is best. Be careful to remove all weeds—as Brooklime, Sedge, and the like, and we have no doubt you will be successful.

OOLITIC LIMESTONE SAND'S EFFECTS ON TULIPS, &c. (*A Subscriber*).—We have not had much experience with sand of this kind, but we should have no hesitation in using sand from the roads formed of oolitic limestone, as the mellowing and fertilising influence of the air and rains, as well as horse droppings, render road sand a favourite material. As you say the sand you speak of is fatal to American plants, we hardly know whether to recommend it for the Ranunculus. Our impression, however, is, that sand from the roads may be used in most cases with advantage, but that from a pit or quarry ought to be used with caution, not only on account of the danger of its containing deleterious substances, but also from its not having been sufficiently exposed to the action of air and water. In the absence of further information, we only advise road sand to be used.

CLEMATIS JACKMANNI DISEASED (*A Subscriber*).—We should not by any means recommend cutting the plants down at this advanced season, for the Hop-growers have found out long ago that it is imprudent to submit their capricious plant to that operation, and there is a great resemblance in the growth of the two. If the disease arises from insects, destroy them by the means so often recommended in these pages. As it is late now to expect a useful young healthy growth, we would prefer leaving whatever top there is on the plant, for it is astonishing of what service a few diseased leaves and half-withered stems are in enabling the Hop plant to store-up food for next year's growth, and the same, we think, will be the case with the Clematis. If, however, the plants are in a position where their unsightly appearance is objectionable, you might pot them, taking care to retain all that has life in the top, and let that remain till it ripen and die-off in autumn.

CROPPING BETWEEN PYRAMID FRUIT TREES (*H. L.*).—Your trees being 10 feet apart and recently planted, some useful crop may be taken off the ground; and if it be suitable for Strawberries, we would recommend that crop in preference to any other, as we have an impression that the roots of fruit trees ought to be as little disturbed as possible by cultivation after they are once planted. The crop (where there is any) the present year justifies our remarks. Orchards on grass being the most fruitful, we should hardly recommend Gooseberries, as by the time they arrived at a good bearing size they would injure the lower branches of your pyramids. Some of our best managers of orchards never dig their established plantations, but simply hoe the weeds, and apply dung of any kind they can get over the surface in winter, or at any other time, they justly considering that continued digging prevents the roots occupying the surface soil, which it is needless to say is always the best. As Strawberries can be removed with the hoe when no longer wanted, we do not think you can have a more suitable crop to occupy the space you now complain of as being unprofitable and expensive.

FLOWERS TO SUCCEED CROCUSES (*G. S.*).—Either double Daisies or Heartsease will answer your purpose of replacing the Crocus, but they should be planted, not in the same row, but at least 6 inches from the Crocuses.

HEATING FROM A DRAWING-ROOM FIRE (*Florentine*).—Your only chance of heating the conservatory from a boiler at the back of the drawing-room fireplace will depend on the relative height of the two places, as hot water cannot easily be made to go down below the boiler. One of the common boilers used for fireplaces would do. If open at the top, the water cannot be taken higher. With a close top, and supplied from a more elevated cistern, you can take pipes as high above the boiler as you like, but you cannot well descend below it. These circumstances must be attended to, as you have already the ranges of piping in the house. Heating from a drawing-room fireplace will involve the necessity of a fire being kept in a cold night. This could be done by having two metal plates, one in front and one over the fireplace, so as to keep most of the heat close to the boiler at night. If it had been a kitchen and low enough, we should have said, Heat so by all means. It is rather different with a drawing-room, and we rather think the levels of the two places will not suit, though of that we have no information. On the whole we should, if at all practicable, have a small furnace and saddle boiler outside of the house.

AMERICAN BLIGHT (*J. B. S. H.*).—We know of no preventive, but we find brushing the trees in winter with paraffin oil a complete cure. Let the bristles of the brush reach well into the crevices of the bark. As the insect descends to the roots in winter, the thick parts of these should be laid bare and dressed with the oil, covering up again after the operation.

SITE FOR FERNERY (*A. S. A.*).—The site is very suitable for a fernery. The front you may form of the windows you have by you, and as they face the north they will not need shading. The roof should be a span, unless you can raise the back wall so as to give the required incline to the glass, which should have a foot fall to every 3 feet of width. The roof should be all glass, and we would have the woodwork prepared for rough plate—the most suitable glass for your purpose. The best mode of heating is by hot water, and we should have the pipes concealed as much as possible; best under the floor or pathway, with an iron grating over them. This will also serve as a path. One or two lights in the roof, made to open, will be sufficient ventilation.

PLACING CAMELLIAS OUT OF DOORS (*A Subscriber*).—Placing Camellias under the drip of trees is bad practice; in fact, we do not consider it good practice to place them out-doors at all. Keep them, after the buds are set, in a cool well-ventilated house, shaded from the powerful rays of the sun. The best position out of doors is an open one, but shaded from the sun. We keep our plants constantly under glass, never removing them from the house in which they grow and flower.

WINTERING SEEDLING TREE CARNATIONS (*J. W.*).—Instead of planting them out we should take them up at the end of August or early in September, place them in pots that will hold the roots without cramping, and winter them in a cold frame, with abundance of air in mild weather, and giving the protection of mats over the lights in severe periods. The strongest you may pot in 5 or 6-inch pots, and remove to your heated house in October; it is likely you will get some blooms from them next spring. The others you may plant out in spring, and they will flower next summer, when you can select for propagation such as you deem worthy.

FAIRY RINGS ON LAWN (*C. R. G.*).—"A good lawn is in danger of being spoilt by toadstools of recent and rapid growth forming circles in the grass in all directions, this, too, with a gravel subsoil, good drainage, and constant attention." The Rev. M. J. Berkeley says, "A patch of spawn, according to the fashion of many fungi, spreads centrifugally in every direction, and produces a crop at its extreme edge. The soil in the inner part of the disc is exhausted, and the spawn there dies or becomes effete. The crop of fungi meanwhile perishes and supplies a rich manure to the grass, which is in consequence of a vivid green; the parts within the ring, in consequence of former exhaustion, looking dry and parched, and those beyond less luxuriant from comparative want of manure. Thus, year after year, the ring increases in diameter till it attains dimensions of many yards across. If any accident happens to the spawn in the first instance, a part only of the circle may be developed. Rings of fungi often occur in woods, but as they grow amongst decayed leaves, the circles are seldom observed by any except professed mycologists. Marasmius oreades, Agaricus gambosus, and A. arvensis are amongst the most prominent inhabitants of fairy rings." Probably an application of salt would destroy the mycelium of the fungus; it may be applied at the rate of six bushels per acre, but we are not quite certain whether it would in that quantity injure the grass, which is affected by salt injuriously more readily than many other plants; but to have any effect on the fungus less salt must not be applied per acre; besides, the grass will soon grow again. Perhaps it would be well in the first place to give the lawn a good soaking with lime water, made by mixing 12 lbs. of lime in thirty gallons of water; stir well, and when the liquid has stood for two days give the lawn a thorough soaking, making holes, if necessary, to allow of its entering the soil. You may in a few days follow with a good watering of salt water, half a pound being dissolved in three gallons of water, and applied to the parts of the lawn attacked by the fungus. In such parts make small holes about 3 inches apart and 6 inches deep, and fill them with the lime and salt water.

PACKING GRAPES (*A. Booty*).—"If you only want to pack them in an ordinary way, so as to reach their destination fit for table, we know of no better mode than putting each bunch into a paper bag, tying up its mouth, and packing them one bunch thick in a box with dry straw cut very short, or what in stables is called chaff. A good quantity of this over, under, and between each bunch, makes as elastic a bed as anything we have tried. We have in this way sent Grapes in excellent condition from Kent to the north of Scotland. If you want to send them with the bloom intact to a show, both the stalk and tip of the bunch may be fastened to the exhibiting board by a string passing through the board and fastened underneath. The board may then be fixed to some cushion inside a box, and care must be taken to prevent the outer box being turned upside down. Thus packed it is possible the Grapes may reach their destination in pretty good order; but even with all this, there is great uncertainty when such delicate fruit is left to the tender mercies of railway porters, and we would therefore even then venture on covering the Grapes with fine tissue paper, and a few sheets of wadding gently put on the top of this, so as to prevent in some degree the displacement of berries by rough treatment. Paper shavings make a good elastic bed, and so does cotton wool; but we do not like bran, it is liable to heat; sawdust is worse, and moss is dirty. We have found, after trying all these things, that straw chaff, dry and sweet, is both the cheapest and most convenient material for the ordinary packing of Grapes, Pines, Peaches, Plums, and Pears, taking care to wrap each fruit in soft paper before putting it in.

NAMES OF PLANTS (*A Subscriber*).—1, *Staphylea pinnata*; 2, *Leycesteria formosa*; 3, *Hypericum calycinum*; 4, *Lychnis fulgens*; 5, *Collomia coccinea* (*Grasmere*).—*Galeopsis Tetrahit*. (*Fowglove*).—*Verbascum Thapsus*. (*Mrs. H.*).—1, *Campanula latifolia* (?); 2, *C. latifolia*; 3 and 4, *Campanulas*, not nameable from specimens sent; 5, *Meconopsis cambrica*; 6, *Geranium pratense*; 7, *Indeterminate*; 8, *Phytolacca orbiculata*; 9, *Myosotis palustris*; 10, *Eurotia*, perhaps *G. fruticosa*; 11, *Orobis vernus*. (*J. P.*).—*Origanum Dictamnus*. (*Young Journeyman*).—1, *Pellaea hastata*; 2, *P. rotundifolia*; 3, *Blechnum occidentale*; 4, *Adiantum hispidulum*; 7, *A. diaphanum*; 7, *Aspidium angulare*; 8, *A. falcatum*; 6, *Nephrodium decompositum*; 9, *Athyrium Filix-femina cristatum*. (*R. N.*).—1, *Lastrea Sieboldii*; 2, *Pteris arguta*; 3, *Asplenium obtusatum*; 4, *A. filicinum*; 5, *Doodia caudata*; 6, *Blechnum occidentale*; 7, *Goniophlebium appendiculatum*. (*E. Martin*).—Your Fern cannot be positively determined without fructification. It seems a young state of *Lastrea dilatata*. (*C. F.*).—*Erigeron canadensis*. (*A. Brunning*).—1, *Melilotus officinalis*; 2, *A. Cyperaceus* plant, but indeterminate from specimen sent. (*Mrs. M. S. Green*).—We do not recognise your plant from the single young leaf sent. (*Flora*).—*Junia Conyza*. We know of no elementary publication for the subjects named. Mr. C. F. Hobkirk, Huddersfield, advertises a new and cheap handbook of Mosses. (*B. F.*).—Yes; not unusual.

POULTRY, BEE, AND PIGEON CHRONICLE.

POULTRY INJURED BY RAILWAY OFFICIALS.

I HAD two pens of poultry at Spalding Show, and on receiving them at Bradford found that some person or persons had wilfully cut halfway through a cock's comb. Luckily I opened the hamper while in the parcel office, and saw the bird in the condition stated. He was the cock bird of the third Spanish prize pen at Spalding. The Secretary of Spalding Show informed me that the bird was all right when delivered to the railway company,

and I found on inquiry that the birds arrived in Bradford by the 2.50 A.M. train, on the 28th of July, and also that the night watchman, guard, and another person exhibiting in the same class had my birds out of the hampers examining them. I have written to the railway company claiming damages. Do you think they are liable in this case?—JOHN POWELL.

[If you can establish by evidence what you state, we consider that the company are liable. But you must also prove the amount of damage.—EDS.]

LIGHT BRAHMAS.

ALLOW me to reply to Mr. J. Long's correction of my advertisement. I would not occupy your space, or note his remarks, but for two reasons—viz., the probability of the depreciation in the estimation of the birds by the gentleman who bought them, and the attack he makes on a lady who never advertised or exhibited a pen of Light Brahmas.

At the late Plymouth Show Mr. J. Long made the following statement in the presence of one of the Committee and myself before the awards were known, that his Crystal Palace cockerel and Young Sampson were there, and that he was sure of first and second prizes—there were no birds to compete with them, but his birds were not noticed. I do not deem it any honour or feel any particular pleasure in beating "Young Sampson," considering how seldom he has figured in the prize list since taking the cup at Plymouth in 1870, and at which Show Mr. Long claimed him, and since which Mr. Long has talked a great deal but performed very little. At the late Exeter Show Mr. Long's two pens were respectively highly commended and commended, and my only pen shown second prize. Will he deny that "Young Sampson" was not there?

In conclusion, if the gentleman who bought my birds is at all dissatisfied with them, I shall be very pleased to take them back on his paying carriage both ways, and making good all losses, if any.—F. SECOCMBE, *Totnes, Devon*.

LUTON POULTRY SHOW.

THIS was held on the 25th July in connection with the Bedfordshire Agricultural Society's Show. The following are the awards:—

DORINGS.—1, T. C. Burnell. 2, J. L. Loundes. c, M. Leno.
COCHINS.—Buff.—1, Lady Gwydyr. 2, H. Lloyd, jun. hc, M. Leno; J. Bloodworth. *Any other Variety*.—Cup, 1 and 2, R. S. S. Woodgate (White). hc, H. Lloyd, jun.
GAME.—Black-breasted and other Reds.—1 and 2, R. Hall. *Any other Variety*.—1 and 2, R. Hall.
SPANISH.—1, Nicholls Bros. 2, W. R. Bull. hc, R. Wright.
HAMBURGHS.—Gold or Silver-pencilled.—1, W. Speakman. 2, W. K. Tickner. hc, M. Leno. Gold or Silver-spangled.—1, L. Wren. 2, M. Leno. hc, T. Love.
BRAHMAS.—Dark.—1, R. B. Wood. 2, Lady Gwydyr. hc, W. Ewer. c, H. Yardley. Light.—1, M. Leno. 2, J. Bloodworth. hc, Mrs. T. Turner; Rev. R. M. Ridley. c, Mrs. T. Turner; J. Atkins.
BANTAMS.—Sebright.—1 and 2, M. Leno. hc, U. Speary (2). *Any other Variety*.—1, Rev. E. Tiddeman. 2, C. Bloodworth.
CREVE-ŒURS.—1, R. B. Wood. 2, J. J. Malden. hc, A. E. Deane; W. Dring; J. K. Fowler. c, C. A. Barnes.
FRENCH.—*Any Variety*.—1, Rev. M. Ridley. 2, J. K. Fowler. hc, R. B. Wood.
POLANDS.—1 and 2, M. Leno.
ANY OTHER VARIETY.—1, R. S. S. Woodgate (White/Silkie); 2, Rev. R. M. Ridley (Malays). hc, Lady Gwydyr (Silkie). c, J. K. Fowler (White Leghorns).
SELLING CLASS.—1, Lady Gwydyr (Buff Cochins). 2, R. Hall (Game). hc, G. Shrimpton (White Cochins); J. Cockrell (Golden-spangled Hamburg); R. Treaswell (Dorkings); T. C. Burnell (Dorkings); J. Bloodworth (Buff Cochins); C. Reed (Chinese Bantam); J. K. Fowler; Rev. E. Tiddeman (Light Brahma); T. Chambers, jun. (Game); T. Sear (Dark Brahma). c, M. Leno (Light Brahma); E. Latour (Houdan).
TURKEYS.—1, E. Arnold. 2, C. Oakley.
GUINEA FOWLS.—1, T. Conder, jun. 2, M. Leno.
DUCKS.—*Aylesbury*.—1 and hc, J. K. Fowler. 2, J. Hedges. *Rouen*.—1, C. A. Barnes. 2, J. K. Fowler. hc, A. Page, jun. *Any other Variety*.—1 and 2, T. T. Malden. hc, M. Leno.
GEES.—1 and 2, J. K. Fowler. hc, J. Hern. c, T. Kingsley.

PIGEONS.

CARRIERS.—1, H. Yardley. 2, T. Chambers, jun. hc, G. C. Mann. c, J. H. Watkins.
POTTERS.—1, R. Ashton. 2, H. Yardley.
JACOBIANS.—1, W. Minson. 2, H. Yardley.
TUMBLERS.—1 and hc, J. M. Braid. 2, H. Yardley.
FANTAILS.—1, J. F. Loversidge. 2, H. Yardley. c, R. S. S. Woodgate.
ANTWERPS.—1, C. F. Copeman. 2 and hc, H. Yardley. c, W. Bull.
ANY OTHER VARIETY.—1, J. H. Watkins (Black Carriers). 2, J. S. Price (Silver Runts). hc, R. Ashton (Black Carriers); W. Ewer (Trumpeters); T. Homes (Blue Turbits); W. Minson (Swallows); W. Nottage (Black Swallows); A. Saddington (Archangels). c, E. F. Dexter (Blue Dragons); R. Hall (Barbs).
RABBITS.—*Lop-ear*.—1, G. Johnson. 2, T. E. & H. Lord. hc and c, F. Ivory. *Angora*.—1, W. B. Hancock. 2, Adams & Russell. *Himalayan*.—1, Adams and Russell. 2, H. E. Gilbert. hc, E. Robinson. *Silver-Greys*.—2, Miss A. Cranstone. *Selling Class*.—1, G. Johnson. 2, Adams & Russell.

RABBITS.

THOUGH the Rabbits at Luton were not so numerous as we had hoped, yet there was every reason to feel satisfied. We feel no hesitation in asserting, that with an attractive prize list arranged with due regard to the requirements of fanciers as regards a proportionate entrance fee as compared with the prizes, and the entries to be for single Rabbits, there would be no reason why this should not in every respect be an excellent Show for Rabbits. We are certain that the Committee are willing to profit by their experience, and so arrange for the future that even greater success than that recently achieved will be their reward.

The Rabbits were arranged in five classes, including the Selling one. The first-prize pair of Loops, black and white, were fairly marked; not quite in so good condition as we have seen, yet worthy their position as regards the greater length of ears and excellence of marking. The second-prize pair (fawn) were fitting companions in position, and large well-formed specimens. There were seven entries. Of Angoras there were three entries. The first-prize pair were excellent as regards size, fineness of wool, and general points of attraction. They were scrupulously clean and white, and evidently owned by those who had some regard for their appearance in public. The second-prize pair were worthy the same remarks as regards their general appearance and points of excellence; they were not quite so large. Of the Himalayan there were three entries. In this class there was an excellent pair both in size, darkness of extremities, and the general appearance. The second in position were also good, lacking somewhat that excellence observable in the first-prize pair. The highly commended pen displayed a little too much of the grey shade in the feet. The Silver-Greys were rather too dark and small. In the Selling class there were four entries. The first in position, a pair of well-marked Dutch, were neat and nice-sized; the second probably a little larger, yet not quite so good, but fair specimens. The ears of the longest-eared pair of Rabbits in the Show were 22 by $4\frac{1}{2}$ inches, buck, and 20 $\frac{1}{2}$ by $4\frac{1}{2}$ doe, by painless measurement.

JUDGES.—*Poultry*: Mr. G. Sainsbury, Devizes; *Pigeons*: Mr. W. B. Tegetmeier, Finchley; *Rabbits*: Mr. C. Rayson. Didsbury.

NORTON AND EAST DERBYSHIRE POULTRY SHOW.

THIS was held at Chesterfield on the 1st inst. The *Dorkings*, *Brahmas*, and *Game* were very superior specimens. The cup offered by Mrs. Arkwright for the best pen of fowls in the Show was awarded to Dr. Holmes's Dark Brahmas.

DORKINGS.—1, Mrs. F. S. Arkwright, Sutton Scarsdale. 2, W. Harvey, Sheffield. *hc*, Dr. J. Britt, Duckwanton, Chesterfield.

SPANISH.—1, J. Mansell. 2, W. Harvey. *hc*, H. Wilkinson, Earby, Skipton; Burch & Boulter, Sheffield.

GAME.—1 and *hc*, C. Chaloner, Whitwell, Chesterfield. 2, H. E. Martin, Sculthorpe, Fakenham.

COCHIN-CHINA.—1, W. Harvey. 2, S. R. Harris, Cusgarne, St. Day.

BRAHMAS.—1 and Cup for best pen of fowls, Dr. J. Holmes, Chesterfield.

2, W. Harvey. *hc*, Dr. J. Holmes; Mrs. F. S. Arkwright; R. B. Wood, Uttoxeter.

HAMBURGS.—1, Ashton & Booth, Mottram. 2, G. Holmes, Great Driffield.

POLANDS.—1, W. Harvey. 2, W. Silvester, Sheffield.

FRENCH.—1, 2, and *hc*, R. B. Wood. *hc*, G. W. Hibbert, Godley, Manchester; W. Dring, Faversham; J. S. Rooth.

GAME BANTAMS.—1 and 2, W. F. Entwisle, Westfield, Bradford. *hc*, W. Harvey.

BANTAMS (Any other variety).—1, R. H. Ashton (Black). 2, W. Harvey. *hc*, Mrs. F. S. Arkwright (White); Burch & Boulter (Gold-faced); J. Watts, King's Heath, Birmingham.

ANY OTHER VARIETY.—*Chickens*.—1, Mrs. F. S. Arkwright (Dorkings). 2, Dr. J. Holmes (Dark Brahmas). *hc*, Dr. J. Holmes (Dark Brahmas); Mrs. F. S. Arkwright (Dark Brahmas); J. Earnshaw, Rotherham (Dark Brahmas); E. Brown (Spanish); Burch & Boulter (Spanish); J. S. Rooth (Malay); Mrs. F. W. Vernon, Sutton-on-the-Hill. *Old Birds*.—1, J. S. Rooth, Chesterfield. 2, R. S. Woodgate. *hc*, J. Heeley; J. Watts.

DUCKS.—1, J. Shillito, Pitsmore, Sheffield. 2, Hon. Mrs. Vernon. *hc*, Dr. J. Holmes; C. Chaloner.

GEESSE.—1, T. P. Wood, Chesterfield. 2, C. R. Chamberlain, Alfreton.

TURKEYS.—1, E. Kendrick, jun., Lichfield.

SELLING CLASS.—1, Burch & Boulter. 2, W. Harvey.

SWEEPSTAKE FOR GAME COCK.—1, C. Chaloner. 2, G. Boot, Chesterfield.

The Judge was the Rev. A. G. Brooke, Shrawardine Rectory, near Shrewsbury.

NEATH POULTRY SHOW.

THE third annual Show was held on the 1st inst. The arrangements were very good, Billett's pens being placed under cover along the sides of the field, and the birds well attended to.

Dorkings were very good, but the *Cochins* much better, and a pen of good *Buffs* won the cup against *Brahmas*. The winners in both Dark and Light *Brahmas* may be pronounced good, but out of feather. *Game*, *Spanish*, and *Hamburghs* were very poor, but *French* fowls were better; *Crève-Cœurs* won both prizes.

Chickens of Any variety numbered twenty-five pens, and many of the pens were excellent; two first, two second, and two third prizes were awarded. The two first prizes fell to the lot of Light *Brahmas*, one second to *Crève-Cœurs*, the other to *Houdans*, and the third prizes were won by *Game* and *Dorkings*.

Ducks made a fair display, and the *Geese*, mostly *Toulouse*, were very large and fine to feather.

In *Pigeons* the birds most worthy of notice were the first-prize *Carriers* and *Pouters*, *Red Jacobins*, and the pair of *Ice Pigeons* in the Variety class. *Tumblers* were poor, but the *Antwerps* were of fair quality; both the winners in the latter class were *Red Chequers*.

DORKINGS.—1, J. Buckley, Penyfai, Llanelly. 2, J. McConnell, Ewins Harold, Hereford.

COCHIN-CHINA.—*Buff and Cinnamon*.—1 and Cup, H. Lloyd, jun., Handsworth, Birmingham. 2, G. Bloodworth, Cheltenham. *hc*, Dr. W. J. Thomas, Brecon. *c*, T. Jones, Swansea Gaol; R. Jones. *Any other Variety*.—1, H. Lloyd, jun. 2, J. Dyer, Pencoe, Bridgend.

BRAHMA POUTER.—*Dark*.—1, H. Feast, Swansea. 2, J. Buckley, jun., Bryn-y-Caeau, Llanelly. *c*, T. H. Williams, Brecon; J. J. Evans, Brecon.

Light.—1, J. Bloodworth, Cheltenham. 2, T. A. Dean, Marden, Hereford. *hc*, J. G. H. Morris, Bridgend. *c*, H. Feast, Swansea.

GAME.—1, C. H. Miers, Crynant. 2, J. Owen, Hafod, Swansea. *hc*, S. Burford, Swansea.

SPANISH.—1, H. Feast. 2, T. R. Mitchell, Swansea.

HAMBURGS.—*Gold-pencilled or Spangled*.—1, C. Bloodworth. 2, J. Cockrell, Cheltenham. *Silver-pencilled and Spangled*.—1, J. Carr, Hafod, Swansea. 2, H. Feast. *c*, J. McConnell.

POLANDS.—1, R. Jones. 2, J. McConnell.

FRENCH FOWLS.—1, G. W. Hibbert, Godley, Manchester. 2, H. Feast. *c*, W. Harris, Penyfai, Bridgend.

ANY BANTAMS.—1, R. Wilkinson, Bridgwater. 2, J. Carr. *hc*, G. Palmer; H. Feast. *c*, J. McConnell.

CROSS-BRED.—2, H. Feast.

ANY VARIETY.—2, C. Maggs, Melksham (Black *Hamburgh*). *Chickens*.—1 and Extra 1, T. A. Dean (Light *Brahmas*). 2, W. Harris, Penyfai, Bridgend (Houdans). Extra 2, Mrs. Thompson, Bridgend (Crève-Cœurs). 3, C. H. Miers, Crynant (Black-breasted Red *Gamel*). Extra 3, H. K. Jordan (Coloured *Dorking*). *hc*, J. C. Carr, Hafod, Swansea. *Any other Variety*.—1 and 2, W. Jones, Swansea (Light *Brahmas*); Mrs. P. H. Rowland (Brahmas); J. Dyer (2); J. Sims (Light *Brahmas*); J. R. Paramore, Preswylfa (Light *Brahmas* (2)); H. K. Jordan (Coloured *Dorkings*). Special Prize, T. Beynon (Gold-pencilled).

DUCKS.—*Rouen*.—1, J. J. Evans. 2, J. T. Griffiths. *c*, G. J. May, Aylesbury.

—1, Mrs. M. H. Knight, Bridgend. 2, J. Buckley, Penyfai, Llanelly. *hc*, Mrs. A. Studdy, Ashdale, Haverfordwest; J. Buckley, jun., Bryn-y-Caeau, Llanelly.

c, J. E. Davies. *Any other Variety*.—1 and 2, W. Jones, Swansea (Bahama and Teal). *c*, H. Feast (Pernvian).

GEESSE.—1, T. Edwards, Brecon. 2, J. Buckley, Penyfai. *hc*, Mrs. Starbuck (Toulouse); Mrs. A. Studdy.

TURKEYS.—1, J. Buckley. 2, H. Cuthbertson, Penrhiewyn. *hc*, Mrs. Rowland, Glyn-Clydach. *c*, Mrs. A. Studdy.

SELLING CLASS.—1, C. Bloodworth (Silver-spangled *Poland*). 2, J. Westren, Bridgend (Coloured *Cochin*). 3, J. McConnell (Game *Bantams*).

c, J. E. Davies. *Any other Variety*.—1 and 2, W. Jones, Swansea (Buff *Cochin*). 2, W. J. Thomas, Brecon (Buff *Cochin*); C. Bloodworth (Buff *Cochin*). *Ducks*.—1 and 3, Miss M. H. Knight (Aylesbury). 2, J. Buckley, jun. (Aylesbury).

PIGEONS.

POUTERS.—1 and 2, W. Crook, Swansea. *hc*, H. G. Holloway, jun., Stroud; W. G. Bale.

CARRIERS.—1, H. Yardley, Birmingham. 2, P. Charles, Maesdyrbaf. Special Prize, C. W. Prior, London. *hc*, W. Crook.

TUMBLERS.—1, H. Yardley. 2, W. Crook.

JACOBINS.—1, H. P. Price, Castle Madoe. 2, H. Yardley. 3, W. Crook.

FANTAILS.—1, H. Yardley. 2 and *hc*, W. Crook.

NUNS.—1, W. G. Davies. 2, W. Crook.

BARBS.—1, W. Crook. 2, H. Yardley.

ANTWERPS.—1, H. Yardley. 2, W. Crook. *hc*, H. P. Price.

TUMBLERS.—1 and *c*, W. Crook. 2, P. Charles.

ANY OTHER VARIETY.—1, H. Yardley. 2, J. Buckley (Archangels). 3, W. G. Davies, Swansea (Yellow *Turbitis*). *hc*, W. Crook (Ural Ice, and Black Mottled, *Trumpeters*).

CANARIES.—1, T. Mears. 2, Miss E. Llewellyn, Court Colman, Bridgend. 3, J. Baylis. *hc*, S. Daniel (2); T. Mears; W. Gwyn, Neath Abbey (2). *c*, D. Rees, Tynyceuan; J. Granger.

JUDGES.—Messrs. Hutton, Pudsey; and Nicholas, Newport.

THE PRESENT BEE SEASON.

FOLLOWING in the wake of "B. & W.," I shall, with your permission, detail my experience of the present season. Although only a novice in bee-keeping, I must confess to an absorbing interest in the occupation, and sometimes feel quite inclined to plead guilty to the charge of "bees on the brain" that some of my friends make. The letter of "B. & W." has shown to me that although a novice I have been more fortunate than some of my fellow apiarians, and it is the desire of contrasting my experience with that of your correspondents that has induced me to address you upon the subject.

I commenced bee-keeping in March, 1871, with one purchased stock, and during the year by purchase and increase by swarming I raised my stock to thirteen hives, one of which was tenanted by very good hybrid *Ligurians*. The season was so unfavourable here for the gathering of honey that I had only two stocks heavy enough to stand the winter; but with a determination not to go backward in my new pursuit, I laid in a stock of sugar and fed my light hives liberally. I had the satisfaction of finding in October that all my stocks were heavy enough to stand the winter, but the study of my sugar bill was rather disheartening to my ideas of profit to be gained by apiculture.

During the winter I carefully read up my subject from the works of Taylor, Neighbour, Huish, and Thorley (not the cattle-foot man), and in the spring I was fortunate enough to add to my library Pettigrew and Langstroth. The latter I gave precedence over all others, and by following his teaching and the advice of Mr. C. N. Abbott (always kindly and readily given), I managed to bring through the disastrous spring the whole of my thirteen hives. In June I became a subscriber to the *American Bee Journal*, and received my first number at the end of that month.

Two things I am firmly convinced of—First, that bar-frame hives are the only ones that an advanced apiarian will suffer his bees to occupy; and secondly, that they must be tenanted by *Ligurian* bees to obtain the greatest results.

On May 6th I transferred bees and comb from a straw skep to my first bar-frame hive, and on the 28th of the same month I successfully introduced an Italian queen into it. To-day (Aug. 3), its nett weight is 70 lbs., although I have abstracted from it seven or eight combs of brood to build up other hives. One of the most successful results of such assistance is a cast from my hybrids that was hived on June 14th, and to-day contains 61 lbs. nett. The heaviest hive I have is one that I prevented from swarming by the addition of a large under hive of an octagonal shape. They weigh to-day 114 lbs. nett. I have two of the sized hives that Mr. Abbott recommends in the *English Mechanic*, 17 by 12 inches, by 11 inches inside measure. The first I

made was given to my first swarm which issued on June 4th, and they now weigh 78 lbs. nett. The second is tenanted by a swarm of black bees that were hived on June 17th. This weighs to-day 84 lbs. nett. These hives have eight frames. I am trying to ligurianise all my stock, and all my bar-frame hives are headed with young queens raised from brood abstracted from my first bar-frame hive, which is a ten-frame Woodbury. My hive of hybrids threw off four swarms, all of which are the tenants of wooden hives, and are all heavy owing to the assistance they have received by the introduction of brood combs from other hives.

I have one Stewarton hive which I obtained from Messrs. Craig, of Stewarton. I hived a swarm in one of the four boxes on June 14th, and another in the second portion on the 15th; they united easily. I added a third box as a nadir and put on the super, and to-day they contain 93 lbs. nett, both of the upper boxes being filled with sealed honeycomb. My stock now consists of twenty-three hives, all but one heavy with honey. This one is queenless, and I fear will have to be broken up. I have thrice introduced a queen, and in each case she has been killed by the bees. I think of having one more try with an imported Ligurian queen.

The season has not been a good one, but the white clover has been very luxuriant for nearly a month, and to this fact doubtless I owe much of my success.

One word for my favourites the Ligurians. Let any keeper of the English black bee place a hive of Italians in his apiary and carefully compare them with his blacks, and he will find that they are more prolific, more ready to resent an insult, and more industrious than our English bees. They are greater robbers it is true, but that arises from their superior pluck; where they are introduced black bees must go the wall.

I have forgotten to instance how very disastrous the spring was to the old-fashioned bee-keepers (not bee-masters) in this neighbourhood. Out of three that I know, one lost twenty stocks out of thirty-one, another fifteen out of twenty-three, and the other three out of six; whilst a fourth, who, although a labourer, was open to conviction, by the use of the feeding-bottle successfully carried his six hives into the summer.—R. SYMINGTON, *Market Harborough.*

[We wish many of our readers would send us notes on their apiaries.—Eds.]

BEES NOT WORKING IN SUPERS.

I HAVE now kept bees for the last two years, and so far have had every success with them as regards fertility and supply of honey; but I have been much puzzled with supers and bee-glasses, to neither of which can I get the bees to enter. In my Neighbour's cottage hive there are three bell-glasses, and both last year and this I set these glasses open for the bees to enter, but they have not done so. What am I to do?—R. H.

[As your bees have equalled your anticipations as to fertility and consequent sufficiency of population, it is not easy to account for their refusing to enter the supers. Have you not only excluded all light, but also kept the glasses warm by cloth or flannel wrappings? These are points often neglected, but they are very important, particularly at the time of the bees commencing work in the supers.]

It is not always necessary to attach guide combs, but it should never, if possible, be neglected, as it may make a difference of many days in the time of the commencement of comb-building. For glasses we usually make a sort of inverted cross, the arms being a few inches from the bottom; the end of the upright, passes through the hole at the top of the bell-glass, and is supported by a wire or brad. Two pieces of clean worker comb are selected, and are secured merely by thrusting the arms of the cross through them, there being one comb on each arm pushed up near the upright stick, and so suspended that their lower parts shall almost, if not quite, touch the board on which the glass stands. This induces the bees at once to ascend and attach the combs to the bars, &c. Care must be taken that the dip of the combs is in the proper direction. The combs need not reach the top of the glass.

Another plan is to have a thick piece of wood without arms suspended in the same manner, to which four bits of comb are attached in the form of rays or spokes of a wheel. In some respects this is preferable to the first plan, but the fixing of the guide combs is more troublesome. In this mode, also, the combs should reach very near the bottom of the glass.—Eds.]

TO KEEP EGGS THROUGH THE SUMMER.—Ten gallons water, five pints slaked lime, five pints coarse salt. Put this brine in a good barrel, removing one head. Place the eggs in the brine, most of them will settle to the bottom and arrange themselves small end down; some will float on the surface, but small end down as the others. Now place the head of the barrel which you had taken out on the surface of the brine, for the purpose of weighting down the eggs which float and also to protect the lime in the mixture from becoming carbonised on the surface

and falling in little grains and flakes, which cement themselves to the eggs, giving them a rough and yellow appearance. Eggs packed in this way will keep six months, and I do not know how much longer.

BEES IN A DILEMMA.

I KEEP bees in the common straw hives. My first swarm was in the first week in June. On the 21st July I noticed a great disturbance amongst the bees of the first swarm, and the next day there was quite a stream of honey running out of the mouth of the hive. All the bees seemed to be out, and they were clustered on a straw thatch with which the hive is covered. They are very vindictive. The honey has stopped running, but the mouth of the hive is full of dead bees, and the others do not return into the hive. We have had very hot weather here lately.

When the bees first swarmed I covered the hive with a bag to protect it from the rain. About three weeks afterwards I had the bag taken off and put on a straw thatch. I was surprised to find a nest of ants under the bag on the top of the hive, and I rubbed the hive with sulphur to expel them.—J. H. S.

[We imagine that the entrance of your hive must somehow have become so contracted (perhaps by the weight of the combs pressing the whole structure down), that ingress and egress became impossible for the bees: hence a great commotion inside, and the weather being hot and the combs fresh, a collapse of the honeycomb. Otherwise we must suppose that the mere heat of the weather suddenly brought down a piece of honeycomb upon the doorway and choked it up; then followed, perhaps, the further catastrophe hinted at above, the dying bees inside choking-up the entrance. One of the objections to straw hives is the danger of this very mishap. If not very well made—that is, if loosely put together, they are pressed down by the increasing weight of the comb, and the entrances become gradually closed. We have seen quite new hives with such shallow entrance-ways that we could predict such an accident as that which has befallen you. We would advise your examining the hive, cleaning-out the dead bees and corrupting brood comb, and putting some late swarm into it.—Eds.]

TAKING HONEY IN SUPERS.

I HAVE a swarm of bees hived on the 27th of May, have taken in a super 6 lbs. of honey from them, and put in its place another super, which is now quite full. Should I leave that on or take it off, and if requisite feed in autumn and early in spring? They are hived in a common straw hive (a large one), and are a numerous colony. I may add, my bees this season have done very well. I have taken 9 lbs. from some of them, with plenty remaining for winter feed.—A. T. K., *New Hampton.*

[You are fortunate with your bees this year. By all means appropriate the second super if the stock hive is pretty well supplied, and make-up any deficiency by feeding in October.—Eds.]

OUR LETTER BOX.

TONG AND DUDLEY SHOW.—"In Antwerp, J. Hawley is put as taking the first prize; and in Owls, T. Annakin, both of which prizes I won.—GEORGE CRESSWELL."

MELTON, MOWERAY, CLEVELAND, SHEPHEED, AND GREAT HORTON SHOWS.—We conclude they were local, as they were not advertised.

LIGHT BRAHMAS.—"I throw the gauntlet to anyone that can show that the so-called Light Brahmas were ever Brahmas at all. There is another breed of good birds that have got a name that does not belong to them, and I will show who the usurpers are and the authors of the usurpation, but one iron in the fire at once is enough for—JOHN EVERGREEN."

CHICKEN OR CHICKENS? (*An Old Hen*).—We believe chickens to be the correct plural of chick.

BANTAMS IN CONFINED SPACE (*W. H.*).—The run (24 feet by 6 feet) is small for rearing chickens, unless you tax yourself to provide them with that they lack by constant supplies of sand, grit, sods of growing grass, and such things as they get when at liberty. Why do you not allow them constant access to the kitchen garden? They neither can nor would do any harm. They are not like Cochins, Dorkings, or Brahmas chickens. We cannot think but even a gardener would delight in seeing the pretty little things running across the paths. We do not like your feeding. Discontinue the sharps and the wheat; both tend to make them crop-bound, especially the wheat. Feed on ground oats slackly mixed with water morning and evening; give some barley mid-day either whole or crushed. While they are poorly substitute some bread and ale for the mid-day meal of corn. You do not state the age of the chickens. We are prescribing as though they were nearly adults. If they are young chickens you must feed accordingly on egg, curd, bread and milk, and such like, and feed often.

SITTING SWAN BECOME BLIND (*C. R.*).—We have never heard of flyblows being deposited in the eyes of living animals. The action of the lid alone is a sufficient protection as long as any life remains, or at least sufficient strength to open and close the eye. The Swan must have been in *articulo mortis* when the flies were at work. Maggots in the eye would soon cause death by reaching the brain. In support of our opinion that the Swan was dead, we may mention we have known one sitting on eggs and observed never to move, or even leave the nest for a minute. Examination proved she had been long dead, and the eggs were cold. So far as posture and appearance were concerned, there was nothing to indicate she had ceased to live. We have known the same in hen and Pheasant. The position is unaltered till the rigidity of the muscles relaxes. We know no nick-names for Swans. They

are sometimes called cock and hen, but more frequently male and female. Bewick calls them the latter.

PRICE OF CRÈVE-CŒURS (T. H.).—If you desire only pure-bred fowls you can buy them in a month's time at from 12s. to 14s. each. You ask for points. If you mean to insist on them you will have to give more money. Square bodies, short dark legs, good top-knot and beard, large size, or the promise of it.

SKIN OF SILKIES (G. B. F.).—The skin of a Silky must be very dark blue, almost black. The comb should be dark, and the face and deaf ear light steel-blue. These are the distinctive marks of a Silky. Without them the bird is a pretender, and can only be disqualified if shown among pure birds.

HOUDANS—GAME (G. P.).—Excepting when it is necessary to have the earliest eggs we should never discard hens only a year old. For breeding chickens we prefer two-year hens, but they do not lay as early as pullets. Houdan hens are better the second than the first year. Many other breeds—Cochins, for instance—are never so good after the first year. They lay more the second year, but not as early. The difference in Game fowls is only in feather, but for satisfactory and easy breeding we prefer the Black and Brown Reds.

DUCKS CONVULSED (H. H. G.).—Your Ducks pick up something that disagrees with them, and from your description we should say something that swells and hardens in the weasand. A Duck has no crop. This would interrupt the circulation to the brain, and cause the bird to roll over as you describe. If of frequent occurrence it would, of course, cause inflammation and death. You can test this by shutting them up where they have only that which is given. You will see whether they recover, or whether they are still attacked.

DUCKINGS DYING (E. H.).—You will in future save your young Ducks if you put the old Duck and her brood in an old pigsty or such place, where there is shelter within and opportunity without of foraging among loose and irregular stones, and the puddles formed by inequalities of the outside. They will do here for a fortnight or three weeks, and can then be let out with the Duck. We do not think the addition to the contents of the ditch would account for mortality, as they are not squeamish in appetite or digestion. We do not admire your feeding. Ducks will die of poverty, starvation, and vermin, although plentifully fed on rice. Boiled potatoes are very bad food for all poultry; they cause extensive disease of the liver. Barley meal and whole corn are better feeding.

HOUDANS LAME (A. C. C. H.).—What do you mean by "the run?" Is it merely the roosting-house, or is all their space covered in a similar way? If it is, you need seek no farther for the cause of lameness. The feet of birds will bear contact with gravel stones, however rough, without lameness, but they cannot bear the sharp corners of broken bricks, nor their indented sides. If you have no other run, have all the bricks carefully raked off, and leave the rest as it is. It will not do to have the bricks broken and rammed in, as it forms a surface too hard for the fowls to scratch, and also holds damp, that is injurious to them. Unless you do this all will become lame.

CARRIER LAYING SOFT EGGS (J. B.).—This may arise from the bird not being able to procure materials for the formation of the shell. If this be so, put into your loft a pan filled with broken old mortar, and a little salt mixed with it. If the bird has this already, the cause is inflammation, and give her a calomel and rhubarb pill and low diet.

TARRING A PIGEON HOUSE (Rat Trap).—Tarring the Pigeon house will have no bad effect on the Pigeons. The best time to do it is any time while the weather is dry.

PRESERVING KIDNEY BEANS AND PEAS (Note).—We never succeeded in keeping them green and palatable for winter use. Any reader who has been successful will oblige many of our readers by detailing the process.

JUDGING JUDGES (Don't bother me.)—We quite agree with you in considering that a judge should not be assailed personally or in any way for his decisions; but if by being so assailed he is induced, as you say, at some future show to give a prize undeservingly to his assailant, then he is totally unfit to be a judge. If he is discreet, a judge will not needlessly enter the exhibition after giving his awards, for losers are not usually amiable in temper.

WATER FOR RABBITS (J. A. A.).—Your Rabbits should not be allowed to go through the water, or even drink of that in the pond, at any rate not as freely as you state. A little fresh water at times is beneficial to them, especially if confined in hutches, and during hot weather in particular, but three or four table-spoonfuls every alternate day will be sufficient.

MICE PEST.—"NORTH WILTS" says, "My house being near a rick yard is overrun with mice; they have in fact taken entire possession of me and mine. My cat, though an excellent mouser, appears to have given up her vocation in despair. I am afraid of using poison lest mine enemies should be more terrible in death than in life. Can any of your readers tell me of a poison that will kill the mice in such a way that they will not retire to die in their holes, and thus create a nuisance? Were I the Emperor of Morocco, a second Whittington should be my prime minister."

[We fear unless you use strychnine there is no poison of which it can be truly said "eating is instant death." We believe that pills containing phosphorus are the best poisons to employ for the destruction of these marauders. The following mixture also lures and destroys them:—Black hellebore root powdered, 1 oz.; seeds of stavesacre powder, 1 oz.; oatmeal, 2 lbs.; oil of caraway, thirty drops. Mix, and place little heaps of the powder near their haunts.]

DO BEES ALWAYS BRING HOME HONEY WHEN LOADED WITH POLLEN? (B. S. H.).—When honey is abundantly secreted by the flowers, we believe that bees gather both honey and pollen; it is probable, however, that the greater part of the honey so collected is employed in the feeding of the young brood. Pollen is often extremely abundant when the secretion of honey is limited.

DO HUMBLE BEES STING? (C. R.).—The workers of the humble bees have stings, and will use them when provoked. The males, like the drones of the hive bee, have no stings. The red-tailed bees defend their stores with great zeal and pertinacity. Whether the sting of a humble bee is more severe than that of our hive bee, we have had no personal opportunity of demonstrating.

THE AYRSHIRE COW (L. H. R.).—You had better advertise for one. We only know that the Shetland cow is very small. The following is a description of the Ayrshire cows:—"They are a middle-horned cattle, excelling, perhaps, any breed of dairy cows in the kingdom. Small in size, their want of symmetry is not so obvious. They afford milk of a very rich quality, and rather oily. They fatten more rapidly than many other races of cattle; for when the butyrous deposit is stopped by drying, the system soon acconforms itself to secrete fat, which they soon acquire on a pasture inferior to that required by more tender animals. There are two characteristics which seem

so thoroughly belonging to this breed, that they ought not to be passed over. The one is the black muzzle, and the other is the yellow-red, which seems to be the natural colour of the race, arranged not in considerable quantities but in blotches or patches. Thus the animals generally present a sort of checked aspect of golden yellow, red and white. The produce of these cows in milk and butter is very great. An Ayrshire cow will give from 600 to 800 gallons of milk in the course of the year; and five gallons per day is by no means uncommon for three months after calving. This milk is also very productive of butter. Three gallons and a half of such milk will yield a pound and a half of butter; so that as much as 260 lbs. of butter will be yielded by an Ayrshire cow; and it is no uncommon thing to have 8 or 9 lbs. of butter produced from one of these cows for some weeks after calving. About twenty-six gallons of milk will afford 14 lbs. of cheese; or a good cow will yield some 35 stone of cheese per annum, which, taken at 10s. per stone, will produce in this article alone as much as £18 per annum. There is another peculiarity of the Ayrshire cows which is deserving of notice. They hold to their milk to a very late period. They are cultivated and nurtured to give milk. Nature would teach an animal to give a supply so long as its calf needed that nutritious assistance; but so far have the milking qualities of the Ayrshire cow been brought out, that in some instances it has been known to yield milk all the year round, and even retain it to an advanced age."—(Milburn.)

DYING EVERLASTING FLOWERS (F. W.).—If thoroughly dried, and kept in a dry room, they never mildew.

METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	A.M.					IN THE DAY.					Rain.
	Baromet. at Sea Level.	Hygromet- er.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Tem- perature.		Radiation Temperature			
		Dry.	Wet.			Max.	Min.	To sun.	On grass		
1872.	Inches.	deg.	deg.	N.	deg.	deg.	deg.	deg.	—		
July	29.893	61.8	53.4	S.W.	63.3	60.0	47.2	121.8	50.3	—	
Aug.	29.889	65.0	56.1	S.W.	62.8	73.7	55.7	121.7	55.7	0.162	
	29.844	57.2	55.0	N.	62.3	65.1	54.3	104.6	55.8	0.230	
	29.762	59.0	54.4	N.	61.2	71.2	50.3	121.2	49.2	0.220	
	29.894	55.8	54.3	W.	61.2	62.8	55.9	75.4	56.6	0.080	
	29.833	60.5	56.2	E.	60.3	63.2	54.2	88.8	50.6	0.270	
	29.743	65.5	59.3	W.	60.0	72.6	55.2	117.4	51.4	0.030	
Means	29.780	60.7	55.8		61.6	68.4	52.7	107.3	52.5	0.923	

REMARKS.

31st.—A very fine day, and very pleasant from being cooler than the weather we have had lately.

August 1st.—Fine day, with pleasant cool breeze.

2nd.—Rain in morning, thunder at intervals all day, from 11.30 A.M. to 3 P.M., some very loud, and the lightning very vivid; rain at night.

3rd.—Fair in morning but cold; rain afterwards occasionally during the day, which was on the whole a very uncomfortable one.

4th.—Rain in morning; dull, dark, November-like day; but finer and brighter in the evening.

5th.—Fine for a short time in the morning; but rainy, cold, and uncomfortable afterwards.

6th.—Fine in early morning, but clouding over between 8 and 9 A.M.; rather showery during the day, but much better than yesterday.

A wonderful change in temperature, the mean in the shade at 9 A.M., being 10° lower than last week, and the mean in the sun 20° lower; we haven't had so cool a week since the beginning of June.—G. J. SYMONS.

COVENT GARDEN MARKET.—AUGUST 7.

BUSINESS has fallen off very much, and the markets are not nearly so well attended. Soft fruit is becoming scarce, and very few Apples or Pears of home growth are offered. The supplies from France and other parts of the South of Europe continue large.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	£ sieve	3 0 to 0 0	Mulberries.....	£ lb.	1 0 to 0 0
Apricots.....	doz.	2 0 4 0	Nectarines.....	doz.	6 0 10 0
Cherries.....	per lb.	0 0 0 0	Oranges.....	£ 100	8 0 14 0
Chestnuts.....	bushel	0 0 0 0	Peaches.....	doz.	8 0 18 0
Currants.....	£ sieve	5 0 6 0	Pears, kitchen.....	doz.	0 0 0 0
Black.....	do.	5 0 6 0	dessert.....	doz.	2 0 4 0
Figs.....	doz.	4 0 8 0	Pine Apples.....	lb.	3 0 6 0
Filberts.....	lb.	1 0 0 0	Plums.....	£ sieve	5 0 0 0
Cobs.....	lb.	0 0 0 0	Quinces.....	doz.	0 0 0 0
Gooseberries.....	quart	0 9 1 0	Raspberries.....	lb.	6 0 1 0
Grapes, at home.....	lb.	2 0 5 0	Strawberries.....	£ lb.	1 0 2 0
Lemons.....	£ 100	8 0 14 0	Walnuts.....	bushel	10 0 25 0
Melons.....	each	2 0 5 0	ditto.....	£ 100	1 0 2 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	doz.	4 0 to 6 0	Mushrooms.....	pottle	3 0 to 5 0
Asparagus.....	£ 100.	0 0 0 0	Mustard & Cress, punnet		0 3 0 0
Beans, Kidney.....	£ sieve	3 0 0 0	Onions.....	bunch	0 4 0 0
Broad.....	bushel	3 0 0 0	pickling.....	quart	0 6 0 0
Beet, Red.....	doz.	1 0 8 0	Parsley per doz. bunches		3 0 4 0
Broccoli.....	bundle	0 9 1 6	Parsnips.....	doz.	0 9 1 0
Cabbage.....	doz.	1 0 1 6	Peas.....	quart	1 0 1 6
Carrots.....	doz.	3 0 4 0	Potatoes.....	bushel	2 0 4 0
Capsicums.....	bunch	0 0 0 0	Kidney.....	doz.	0 0 0 0
Cauliflower.....	doz.	2 0 4 0	Round.....	doz.	3 0 4 0
Celery.....	bundle	1 6 2 0	Radishes.....	doz. bunches	0 6 1 0
Coleworts.....	doz. bunches	2 0 8 0	Rhubarb.....	bundle	0 0 0 0
Cucumbers.....	each	0 3 1 0	Salsify.....	£ bundle	0 9 1 0
pickling.....	doz.	0 0 0 0	Savoy.....	doz.	0 0 0 6
Endive.....	doz.	2 0 0 0	Scorzoneria.....	£ bundle	0 9 1 6
Fennel.....	doz.	0 0 0 0	Sea-kale.....	basket	0 0 0 0
Garlic.....	lb.	0 8 0 0	Shallots.....	lb.	0 4 0 9
Herbs.....	bunch	0 3 0 0	Spinach.....	bushel	3 0 4 0
Horseradish.....	bundle	5 0 7 0	Tomatoes.....	doz.	2 0 4 0
Leeks.....	bunch	0 0 2 0	Turnips.....	bunch	0 3 0 6
Lettuce.....	doz.	0 9 1 0	Vegetable Marrows.....	doz.	2 0 4 0

WEEKLY CALENDAR.

Day of Month	Day of Week.	AUGUST 15—21, 1872.	Average Temperature near London.			Rain in 43 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m.	h.	m.	h.	m.	h.	m.	h.	Days.	m.	s.
15	Th	ASSUMPTION.	73.1	50.0	61.6	17	47	41	20	47	33	45	49	0	11	4	11
16	F		73.0	51.5	62.2	21	48	4	18	7	30	6	49	0	12	3	58
17	S		72.7	50.1	61.4	23	50	4	16	7	14	7	5	2	13	3	46
18	Sun	12 SUNDAY AFTER TRINITY.	73.2	50.7	62.0	26	51	4	14	7	44	7	33	3	15	3	38
19	M		73.1	49.2	61.2	21	53	4	12	7	9	8	4	5	16	3	19
20	Tu		72.8	50.6	61.7	20	55	4	10	7	28	8	34	6	16	3	5
21	W	Wotton-under-Edge Horticultural Show. Royal Horticultural Society, Fruit, Floral, [and General Meeting.]	72.6	49.7	61.2	14	56	4	8	7	45	8	59	7	17	2	50

From observations taken near London during forty-three years, the average day temperature of the week is 72.9°; and its night temperature 50.2°. The greatest heat was 92°, on the 18th, 1842; and the lowest cold 36°, on the 18th, 1866. The greatest fall of rain was 0.81 inch.

ABOUT ERFURT SEED-GROWERS, AND GETTING TO THEM.—No. 1.

I AM on the road." Whither? To the land of the Teuton. To the land of brown bread and saurkraut, poetry, and music—what seeming incongruity! To the land where every woman is a Minerva and every man a Mars; to the land that bristles with bayonets and expands in education. Yes, I have passed through fertile and unpicturesque Belgium, left behind me the iron district of Rhenish Prussia, and now I have crossed the Rhine, forsaken the ordinary route of English travellers, and am journeying onwards through what may be truly called Germany proper.

Scarcely has the elegant fretted outline of Cologne cathedral faded from view, when the hitherto flat surface of the country begins gradually to become more undulating, and at last breaks up into a range of moderately lofty hills. Through these, in most tortuous course, a tolerably broad river picturesquely winds its way, and over this the railway frequently passes until necessity demands that it should take an opposite direction. At a glance the traveller can see it is not a fertile district. The hills in some places are rocky and steep, and appear to be but thinly covered with soil, wherein nothing seems to flourish but certain Coniferae and some sparsely-growing shrubs. In the alluvial deposits among the hollows exist the only signs of successful cultivation, and here in intermittent tracts are grown grass and those cereals for which the climate is best adapted. Any farmer from the Eastern Counties or the Border could hardly resist an involuntary smile on looking over the little patches which here cover the face of the ground. No jealous hedges or ditches, but the crops rest beside one another in charming simplicity, seemingly glorying in their numbers, and looking very much like a seedsman's trial-garden on a somewhat larger scale. With this primitive style of farming the numerous hamlets, some one of which is always in sight, seem to be in perfect keeping. The houses which form them almost invariably have walls of a framework of whitewashed wood, the intervals being filled up with rafters and clay or bricks; the roof of thatch, in most cases overgrown with moss, and having a greenish-brown colour. The village church, as a rule, is a most simple, bare, and ugly erection, very different from the steepled or towered churches of our own rural homes, so often overgrown with Ivy and surrounded by noble trees. Now and then there would come in sight, situated on some rocky eminence, and in picturesque decay, the once-proudly towering home of the feudal baron.

Onward the train still goes at no very rapid pace and with frequent stoppages. Here, at the stations, one has time to remark how the type of the people's countenance is gradually changing, and the further on we go the greater becomes the resemblance to the Saxon type of our own English race. Here, too, is almost invariably to be seen a soldier—generally a medium-sized weighty-

looking fellow, who, like the verb in their own German sentence, looks as if he might often be a long time in coming up to the mark, but very effective when he got there. And so on I go. The scenery grows less hilly, but otherwise much the same; now appears another river, a more than ordinarily large wood, a good-sized town with a castle in the middle, a distant tower, a waste. The train goes slowly, and the hours in proportion; night draws on; a junction, two hours waiting, three hours more travelling in darkness, and then I am at the point. Yes, is it surprising that under the provocation of sixteen hours' travelling in order to span over less than two hundred miles one's mind is apt to be irritable, and one indulges in a tirade against journeying generally, or to become discursive and indulge in prattlings, as I have? But now at last it is all over, and I have come to the point from which I hope to send you some information more congenial, perhaps, than that which has gone before.

My destination was Erfurt, and at last I am there. Here, within the town the worship of the god of war is diligently pursued, and the temples erected in his honour frown grimly forth upon the smiling country over which the gifts of the goddess Flora are thickly strewn. In prosaic language Erfurt is an important fortress, and the seat of a considerable trade in flower seeds. There is nothing very interesting in the town itself, unless it be its ancient history, its cathedral, its ramparts, and the unevenness of the streets—which last property seems to be common to most German towns. The houses do not appear to be particularly old, and if there are any of remarkable age they do not possess the picturesqueness of those of the old Flemish cities. This may, perhaps, be due to the fact that several times in its history great portions of the town have been consumed by fire, the last fire having taken place in 1814, when, after the battle of Leipsic, the French defended it against the advancing army of the allies. At present it has a population of about 40,000 persons, and possesses a pretty thriving trade; but although this time may be justly called the most flowery period in its history, still the most flourishing was during the early part of the fifteenth century, when it was one of those towns through which the treasures of the east found their way westward, and when it carried on a great trade in woad, which, in those days, was used instead of indigo. Then the population numbered 80,000, but what with struggles for liberty against the supremacy of the Archbishop of Mayence, what with the intrigues of ambitious electors and princes, roundabout, and the bitter dissensions among the citizens themselves, it gradually sank lower and lower, until in 1620 it had but 15,000 persons within its walls, and retained but a small fraction of its once so prosperous trade. It can boast of having been the home of Luther in his younger years, and also of having given birth to many other men, who, although not much heard of now, were nevertheless noted in their own day. It once possessed a celebrated university, but that had descended to such a state of infirmity that it was disestablished in 1816. It was here,

in 1808, that Napoleon held his assembly of crowned heads, at which there were present the Emperor of Russia, four kings, and an innumerable concourse of princes, counts, and other persons of high degree.

The site of the town is in outline not unlike that of a kidney, the concave side of which looks towards the west, the convex towards the east, and the two ends respectively north and south. At the upper end, near the Brühler Thor (or gate) a somewhat large stream enters the town, and following roughly the convex outline leaves it again near the Johannis Thor at the lower end. Before this begins to curve it throws off a branch which, passing through the middle of the town, rejoins the main stream at the point of egress. Thus it will be seen that the inhabitants here stand in no need of water, and it is, doubtless, in some degree due to this fact that the cultivation of seeds has been carried to such an extent around the walls. Deep in the concave side of the said kidney-shaped outline lies the great square of the town, the Frederick William's Place, on the southern side of which is the cathedral placed side by side with the church of St. Severi. The former is built with one end upon a hill in the elaborate Gothic style, somewhat like Cologne on a smaller scale, and has the chancel end, which looks out upon the square, elevated upon a course of arches about 30 feet in height. This naturally tends very much to increase the important look of the building, and to it a broad flight of steps leading up between the two churches to the cathedral door greatly adds. The church of St. Severi runs nearly parallel, and separated by but a few feet from the cathedral. The body of the structure presents a very ordinary appearance on the outside, and has, what seems very strange in a building of its size and situation, a roof composed of red tiles. The most notable feature about it is the tower in front, consisting of three steeples all combined, the middle one of which projects to some distance beyond its twin brothers on each side. Without the church of St. Severi, and to the right of it and the cathedral, is the fortress, planted upon a considerable height, and commanding a splendid view of the surrounding country. There is nothing very imposing in its external aspect as to the spectator below it seems to consist simply of some earthen ramparts and a few long, low-roofed, domestic-looking houses. Crossing to the southern side of the Frederick's William's Place, and keeping round through a small lane, we come to the back of the cathedral, whence, passing over the smaller branch of the Wilde Gera, as the river is called, and continuing our walk for about ten minutes along the street, we at last arrive at the Brühler Thor. Of these Thors there are in all six. To the eye of an Englishman, who is not accustomed to see fortified towns in his own land, they seem very imposing. Without is a moat, which runs right round the walls, but is not kept flooded, except near the gates. Across this moat the road is continued, but in case of the approach of an enemy all communication can be cut off by raising a small drawbridge, whilst the ominous look of the loop-holed walls shows very plainly what kind of a reception the adversary who had the boldness to advance thus far would receive. Since 1814 the town has not had occasion to test the effectiveness of its defences; but in 1866, at the time of the six weeks' campaign, everything was got in readiness, and many trees in the environs cut down in expectation of an invasion from the Bavarian frontier.

And now, leaving all matters martial and historical, I will proceed to the horticultural. Situated at but a stone's throw from the Brühler Thor is the establishment of Mr. Benary, the largest seed-grower in Erfurt, and, perhaps, in Germany. Any person passing along the road that leads from the town at this point cannot fail to remark the spacious granary house at about 60 yards from the highway, built of red brick, intersected by pieces of wood, called in England "brick-nogging," presenting a chequered and somewhat fanciful appearance. The front of the grounds is bounded by a brick wall surrounded by a railing, in the centre of which is a rather important-looking gate and porter's lodge. From this gate there runs a well-beaten carriage-drive up to the private house of the owner, which lies somewhat behind the granary, but not in the slightest degree hidden by it. In fact their respective positions are like the strokes of a Z, if the down stroke be drawn strictly perpendicular. On the right hand of the path, between the railing and the front of the granary, is a small dressed ground, consisting of four variously-shaped plots of thick and neatly-kept grass, laid out in beds containing, some of them, concentric borders of *Centaurea candidissima* and *Perilla nankinensis*, crowned in the centre with thriving specimens of *Musas*, others

having double edgings of *Pyrethrum Parthenium aureum* and *Cineraria maritima*, crowned with circles of *Perilla nankinensis* and *Salvia splendens*. In the middle a fountain is in course of erection, and when finished will no doubt add greatly to the already pleasing aspect of the grounds. Crossing over to the other side of the carriage-drive we come upon some sheds filled with fine collections of *Petunias*, both double and single; *Calceolarias*, whose beauty is now gone; *Phloxes*, *Begonias*, some plants of *Lilium auratum*, and smaller quantities of other garden plants in considerable variety.

Passing along towards the house there came to view two glass houses, directly opposite the granary, and running parallel with it and each other. In the first of these is a collection of about six hundred *Gloxinias*, the richness of which when seen, as I saw them, in their prime, is a sight worth going some distance to see. In the other was a very creditable assortment of Ferns, *Musas*, and other sub-tropical plants, arranged in the neatest order, and to all appearance making most satisfactory progress.

At the very back, lying in a direct line with the dwelling-house, and bounded behind by a stream, are a cool house containing *Fuchsias*, and a warm one holding more Ferns, *Musas*, and *Caladiums*. Here also is the heating apparatus of the establishment.

Going out by the gate and crossing the high road I came to the trial grounds, where, although no very large quantity of any one plant is to be seen, there is, nevertheless, a compensation in point of variety. In the first field are a large number of *Cockscombs*, both light and dark varieties, *Portulacas*, a small quantity of *Delphinium nudicaule*, a house containing about three hundred *Gloxinias*; also some *Clintonias*, *Queen Victoria Lobelias*, and *Salvia splendens*. In the second field the varieties were so many, and the number of plants so small, that it would become tedious to mention all, but among them were *Campanula carpatica*, *Aquilegia Skinneri*, and *Callirhoe verticillata*. The third field contained the greatest attraction, and that was a large collection of *Pinks*, the more valuable kinds of which were upon a parallel range of stands, and in this elevated position displayed their beauties to a greater advantage than could their less fortunate rivals below. Of this, the, in my opinion (dare I say so?) most charming occupant of the flower garden, there were many very sweet-scented and beautiful varieties, varying from the most delicate flesh-coloured, plain or dark-edged, to the deepest pure or variegated red, and running through all the intermediate tints in indescribable profusion.

By passing out through the Brühler Thor and bending round to the left, two more of Mr. Benary's fields are reached. In these the principal feature was a large number of *Balsams*, among which were some very pretty carmine and crimson varieties, and after these came *Phloxes*, comprising several variegated-striped kinds. In a corner of the farther field was a strip of *Alyssum Benthami*, which shed its delicious honey-like odour around. Here the proximity of a running stream has enabled Mr. Benary to effect the watering of his plants without that laborious trotting backwards and forwards from the pump to the flower-bed, which is the detestation of all gardeners. By means of a wheel turned by the stream, water is pumped up into a number of barrels elevated at some height on a stand, whence it is conveyed through pipes to those points from which it can most conveniently be distributed, this being performed by the aid of a hose.

Retracing my steps to the Brühler Thor and turning round to the right of it, I came to the greatest number of Mr. Benary's fields, which succeed one another with very little interval. In the first, which lies on the other side of the road, and is about two acres in size, were growing nothing but African and French *Marigolds*. In the second were a number of *Pinks*, some *Stachys coccinea*, some fine double *Campanulas*, and certain varieties of *Sweet William*, comprising in particular a new and very pretty one of Mr. Benary's own raising, which has not yet appeared before the public. Here, also, was a very sombre but dignified-looking *Pansy*, with a dull sheen like that of a splash of Indian ink slightly touched with purple. It is very appropriately named *Dr. Faust*. Besides these there were many more varieties of *Pansies*, nearly every one of which had some beauty to recommend it, and a mixed collection of *Verbenas*, many of them of a deep rich red or purple colour, and very distinctly eyed. In the third field the most striking feature was a number of *Tom Thumb Nasturtiums*, consisting of light and deep yellow, orange, purple, and rose-coloured varieties. Although not a particularly rare plant, and there-

fore not be valued for its own qualities, unless for pickling, there is probably scarcely any other which can excel this in effectiveness when planted in masses, if the different colours be harmoniously blended together. As seen here from a redoubt, peeping through the trees from the top of an eminence, these flowers appear most charming. Besides *Nasturtiums*, there were here also a quantity of *Antirrhinums*, but these were thrown most completely into the shade by their more gaily-attired associates.

Crossing over the road I came to the fourth of Mr. Benary's fields in this quarter. It is much larger than any of those which have hitherto been described, and was chiefly occupied in the upper part by different kinds of Larkspurs, and a purplish red variety of *Senecio*. In the lower part was a considerable amount of *Dianthus Heddwigii* (of which Mr. Benary, as he has given particular attention in this matter, supposes himself to have the finest stock), *Marvels of Peru*, *Godetias*, *Antirrhinums*, and *Dianthus diadematus*.

Of the remainder of Mr. Benary's fields I must speak hereafter.

In closing I would remark, that if the purposes for which the cultivation of flowers is carried to such a high extent are effected anywhere, it is here in Erfurt. Although not laid out with all the taste displayed in the finest of our English gardens, in the midst of neatly trimmed lawns, or along the borders of gracefully-winding, well-gravelled walks, they nevertheless fulfil in a somewhat wilder but not less charming manner the purpose for which they are intended. As seen from the tower of the cathedral, breaking forth here and there from among the surrounding underwood and groups of trees, the full force of their great beauty as appendages to natural scenery when thus grown strikes the beholder at once. I feel almost inclined to say, Give me instead of the formal neatness of a highly-kept pleasure garden, the wild luxuriance of the grounds in the environs of Erfurt as they appear between the end of June and the beginning of August. In this sentiment I should find ardent supporters in the bees, which revel within each bell of the numerous Foxgloves, and among the other flowers of these Flora-favoured plains.—ROBIN.

LILIUM AURATUM.

As but little mention has been made the present summer of the merits of the various species of *Lilium* that were introduced in quantities from countries widely apart, the inference to be drawn would be that none of them exceed in beauty some that we already possess. In alluding to this I do not by any means wish to detract from the merits of any of the new kinds, but as those which have come through my hands have only presented botanical rather than floral claims to distinction, I fear the mass of growers will be disposed to fall back on old well-known species of unquestionable merit when they have only the means of growing a few. As the culture of these is a much easier matter than is often supposed, I venture to refer to one such species that has flowered here in great perfection without any special attention being bestowed upon it: in fact, it has flowered well without being assisted in any way whatever, unless the aid of a stake be accepted as a help to cultivation.

The advent of *Lilium auratum* created no little sensation among plant-growers, and very high prices were quickly exchanged for low ones, as the importation of large quantities of bulbs was met by a doubt of their genuineness, which rendered buyers cautious, but the fact of their being the *Lily* represented being confirmed by their flowering, the next year's importations were more eagerly bought up; and as the losses from bulbs dying off have always insured a sale, fresh consignments from Japan have been made every year without in any way diminishing the demand. Of this the large quantity passing through the hands of an eminent London auctioneer last winter is a proof.

Certainly there is no *Lily* yet discovered to be compared to a fine head of *Lilium auratum*. As the best way to secure such fine heads is also both the easiest and safest mode of cultivation, I have no hesitation in at once recommending the bulbs to be planted out in an open bed, or, what is better, in the spaces between shrubs, where the young shoots can have a little shelter from late spring frosts, for in such places there is less danger of the bulbs being lost than when confined in pots. I am the more convinced of this from having planted out some bulbs several years ago—in fact, soon after they were to be had in quantity, and they have thriven better on the

whole than those retained in pots. In point of hardiness, I regard this species as more capable of enduring a severe winter than *L. lancifolium* and its varieties, for I have lost some of the latter, while in most instances *L. auratum* continues to improve.

That this is the case is confirmed by a plant which is in full flower at the time I write (August 5th). There are upwards of one hundred fully-expanded flowers on one stem, with some more in bud, the total number as carefully counted before being expanded being 111. The stem is 7 feet 6 inches high, round and smooth for about one-half of its height, when it assumes a flattened form, and it is thickly set with leaves from about 2 feet from the ground up to the commencement of the flower-spike, which is limited to about 20 inches of the top. The flowers are on the two sides of the flattened stem, but have, nevertheless, spread in the opening, so as to quite meet and close up around one of the edges (that facing the sun), but there is a slight opening on the other side, otherwise the mass of flower would resemble a blunted cone of about 18 inches diameter at bottom, and more than that high. I need hardly add that the flowers are too much crowded to allow of their being fully expanded, and half the number would probably have looked as well. The occurrence of 111 blooms on a single spike is certainly uncommon, and I should like to know if the number has been exceeded. The girth of the stem at about 2 feet from the ground, where it is round and smooth, is $3\frac{1}{2}$ inches, and the stem had attained its full height before it was staked, but the certainty of its leaning to one side, or, perhaps, breaking off at the collar, rendered it advisable to afford it a support. The situation in which the plant is growing is dry and sheltered, but the soil, instead of being rich and nutritious, would seem to have been robbed of every thing it once contained. Nearly thirty years ago a bed for *Rhododendrons* was made; in it leaf mould and other substances were mixed with peat, and for a year or two the *Rhododendrons* succeeded tolerably well; but there being very large and fine Elm trees on both sides of the bed, it was soon invaded by the roots of these intruders, and in spite of repeated cuttings there are Elm suckers within a yard of the base of this *Lilium*, and most likely all over the bed. The well-being of the plant can therefore hardly be due to the richness of its food, and no artificial stimulant whatever has been given. The *Rhododendrons*, I may observe, merely exist, but this and other *Lily* bulbs have stood there several years. Last year the plant had upwards of thirty blooms, and this season a neighbouring plant bore also about the same number of flowers on a spike. No protection, either winter or spring, was given at any time, but I believe the shrubs by which it was screened from the sun after the frosty mornings in May were of great service to it, as other bulbs that were planted out in winter in an open bed, and fully exposed, were all but killed by the frosts at the time named.

Although the specimen described above is good, I am not sure that the site is that best adapted to this *Lilium*, neither am I sure that peat alone, or peat with the usual addition of sand, is the best material in which to grow the bulbs, for we have had some good heads of bloom from soils of a widely different character. It seems strange that a good-sized bulb, such as that referred to must have been last year, when it produced thirty blooms on one spike, should not have broken up into several smaller ones. I confess I do not expect so great a number again from the bulb that has done so well this year, as I imagine it will break up into several.

There is one thing I would strongly urge on all growers of this species, and I may add of *L. lancifolium* also, and that is, not to disturb the bulbs in the ground for at least three or four years, for I attribute many of the losses in pot culture to, perhaps, keeping them too dry after flowering, or it may be keeping the bulbs in paper, or exposed to the action of the dry air for many weeks. Such treatment can hardly have its parallel in nature, for, assuming even a dry period to occur, the earth is never so dry as the atmosphere; besides which, there is every reason to suppose that the bulbs are carefully screened from the sun's rays or the drying influence of the air by a covering of herbage of some kind not their own, and whether such herbage be in a green or dried state, it, nevertheless, acts the part Nature intended it to do, and the bulb ripens gradually under such fostering care, rather than by the scorching process I fear we often give it in this country, where it is, perhaps, only half grown. To avoid such extremes, I advise all to plant out the greater portion of their stock, and if some natural protection do not exist for saving the young

shoots from our late spring frosts, artificial means ought to be adopted, either by sticking a few evergreen boughs in the bed, or something of the kind. A similar shading had better screen the ripening bulbs in September from the drying sun we often have at that time. Perhaps Mignonette would serve this purpose, and I do not think a better substitute could be found; at all events, my advice to all having a good stock of the *Lilium* is to plant out as many as they can.—J. ROBSON.

P.S.—Since I wrote the foregoing the wind has broken off the fine head of bloom I described, and although much bruised and injured before it starts, I think you might like to see it, and have this morning sent it to you. You will only be able to guess at what the cluster of flowers was like.

[A grander head of Lilies we never saw; it was a dense cluster of flowers nearly 2 feet in length, and 15 inches in diameter, in form that of the housemaid's Turk's-head broom. The unique occurrence of such a cluster is explained by the fact that the flowering part of the stem was fasciated.—Eds.]

ORNAMENTAL GRASSES.

THERE are very few families of the vegetable kingdom to which the terms ornamental and useful may be more justly

challenge attention; yet although most of them are of lowly growth, they possess such elegance and diversity of form that they are worthy of attention, and are, besides, extremely useful for a variety of purposes, notably for mixing with cut flowers, to which the pretty spikes impart an air of singular grace and lightness. One of the best Grasses for such a purpose is that prize of our childhood, *Briza media* or *minima*, the Quaking Grass; *Briza maxima* with large pendant spikelets is also a fine, useful, hardy kind, very striking and effective. So are *Chrysurus cynosuroides*, *Stipa pennata*, and *Setaria macrochæta*.

It is unnecessary, however, to enumerate a list of kinds suitable for such a purpose, the sorts being as numerous as their forms are varied; nor need much be added as to the best method of arranging Grasses when gathered, for it may be seen at a glance which kind is most suitable for a given purpose. Very frequently vases may be seen containing nothing but feathery spikes of Grass, and they almost invariably produce a pleasing effect. To avoid monotony, however, it is desirable to introduce a few well-selected flowers with the Grasses. I know it is more usual to introduce the spikes of Grasses among cut flowers to afford relief and lightness, than to use them so largely as to make Grasses the principal feature of an arrangement, yet those who have not so used them will find



Briza maxima.

applied than to the numerous species and varieties of Grasses. This assertion may at first appear too sweeping, for there are not many kinds of Grasses sufficiently bold in character to



Chrysurus cynosuroides.

the plan worthy of adoption. One of the most beautiful vase bouquets I have seen was composed of a few sprays of crimson *Celosia*, a bold spike of variegated Japanese Maize, and a number of spikes of common Grass gathered from a bank. These simple materials were blended together so skilfully, that one felt no desire to "desert" the bouquet, but rather to contemplate it as an object of rare grace and beauty, and to admire the skill that could effect so much by such simple means.

Many kinds of Grasses are suitable for pot culture, such as

the variegated forms of *Dactylis* and *Panicum*; but there are two sorts which I wish to recommend for the beauty of their flowers—namely, *Lagurus ovatus*, with beautiful, soft, velvety spikes, and the charming little *Agrostis pulchella*. A quantity of both should be grown in moderately rich soil in 5-inch pots, as they are of most easy culture, and very desirable for a variety of decorative purposes.

Many of the stronger-growing Grasses are worthy of a place in the shrubbery, herbaceous border, and by the margin of ornamental water. The stately *Gynerium* must, of course, rank first for such a purpose, and with it may be associated the choicer kinds of *Sorghum*, *Cyperus*, *Spartina*, *Arundo*, *Maize*, *Phragmites communis*, and many others.

Like the *Zea*, *Sorghum* does not in our climate often approach that mature development requisite to render it valuable

to us they appear comparatively insignificant in value when contrasted with the Grasses flourishing in this country. Nature's green carpet that makes the rural scenery of our temperate climate so fresh and pleasant, has no equivalent in the tropics, for there we find no green pastures in the sense in which we understand the term.

Much attention has been given for many years to the selection of Grasses suitable for forming and improving permanent pastures. A series of experiments conducted some years ago under the auspices of the Duke of Bedford, at Woburn Abbey, by Mr. Sinclair, the results of which are clearly set forth in his "*Hortus Gramineus Woburnensis*," did more to promote Grass culture to the rank of a science than anything else that has been done. This in its details is, of course, more interesting to the agriculturist than to the gardener. I may state



Stipa pennata.

for forage; it is, therefore, not likely ever to rank so highly among home-grown economic plants as was at one time expected. It is only in exceptionally hot seasons that its juices become sufficiently charged with saccharine matter to yield much sugar, yet the fact is noteworthy that sugar has been experimentally manufactured from plants of *Sorghum* grown in the south of England. In their native country, the varieties of *Sorghum*, growing to an extraordinary height and size, produce wonderful crops of seed, and the huge stalks are given as food to cattle. They are also used by the natives in some parts of Africa for building huts.

Many other tropical Grasses, and their allies the Reeds and Rushes, are valuable economic plants. Of these the most important are the Rice of India and America, Maize, a staple article of food in America, the Sugar Cane, and the Esparto Grass (*Stipa tenacissima*), imported from Algeria in such large quantities for paper-making. There are other Reeds and Grasses that are commercially important, such as the Bamboo, so much valued for a variety of useful purposes, and the oil-yielding Grasses belonging to the genus *Andropogon*. Stately of growth, and undoubtedly useful as are these tropical species,



Setaria macrochaeta.

briefly that a large number of varieties were carefully collected, cultivated in distinct patches in various soils, and careful notes taken. Thus a mass of valuable and most reliable data was accumulated, and the formation of permanent pastures established upon a broad firm basis, the entire details of the work being explained with such clearness as to render the selections of suitable kinds that are now included in almost every seed catalogue an easy matter.—EDWARD LUCKHURST.

TEA-ROSE ELECTION.

MARÉCHAL NIEL, Gloire de Dijon, Madame Levet, Devonien-sis, Madame Willermoz, Souvenir d'Elise Vardon, Souvenir d'un Ami, Adam, Rubens, Sombreuil, Madame Margottin, and Madame Trifle. I consider Devonien-sis, Souvenir d'Elise, Madame Willermoz, and Maréchal Niel to be the best four. My plant of Marie Sisley is dead. I had a globular and handsome full bloom from it. It is of a creamy colour, with roseate band. Its shape is spheroidal.—W. F. RADCLIFFE.

SPARAXIS PULCHERRIMA.—I notice in the Journal of August 1st, page 93, *Sparaxis pulcherrima* is said to be "an Iris-like plant of surpassing beauty; it usually grows from 2 to 3 feet in height." It certainly belongs to Iridaceæ, but in no way I think resembles the Iris in its flowers. Plants in my

possession have been for the past month, and are still, in bloom, not, however, "2 to 3 feet in height," as one spike measures 9 feet 6 inches, another 9 feet 2 inches. It has a branching habit like *Watsonia fulgida* and *rosea marginata*, except that it is pendulous, whereas the *Watsonia* is erect, but I think resembles that genus. It is a most elegant plant, the flower-stem being divided into from ten to thirteen thread-like branches, each bearing six to eight flowers of a beautiful rose colour, and having the appearance of being suspended in the air, giving the plant a most graceful character. I fully endorse the opinion of your correspondent that "no words can do justice to the elegance of this plant."—C. SMITH, *Caledonia Nursery, Guernsey*.

ORANGE FUNGUS ON ROSES.

ORANGE fungus seems to have become a serious evil, if I may judge by the numerous questions I have with regard to it. The Editors have forwarded me specimens of the leaves sent to them by "D." of Deal. Having had but very little of it myself, I have not had any practical experience in dealing with it, as I take no notice whatever of what I have, and with me a few leaves come off and the shoots start afresh, but I have hardly ever had it on the wood. I see in the same Journal Mr. Radclyffe recommends the use of a solution of blue vitriol. I have no doubt that blue vitriol (sulphate of copper), will be a good thing on account of the sulphur it contains, though I should prefer green vitriol, sulphate of iron, as being less poisonous, and the iron would do good to the plants instead of harm, as the copper would. If the orange fungus is as bad as it is with "D." of Deal, the spores, which are very minute, would be sure to get into the ground. I should like him to try a top-dressing of dissolved bones. This would not only strengthen the growth of the plant, but the sulphuric acid, some of which always remains in an unchanged state among the dissolved bones, would kill the spores of the fungus wherever it touched. It might be more efficacious still to remove an inch of top soil and then apply the bones with fresh soil. Chloride of sodium (common salt), is also very efficacious in the destruction of fungus, but it would always be doubtful how much salt the Roses could bear without injury to the roots, though salt in small doses would be no doubt beneficial as a stimulating manure. I hope, however, that Rose-growers who have had practical experience with the disease, and have succeeded in checking it, or eradicating it, may come forward, as the Editors request, and state their experience. I do not think situation has much to do with it. I fancy much depends upon the winter treatment; coddling to prevent frost often also prevents the frost from killing the spores of different kinds of fungus growth. I have seen orange fungus, black fungus, and mildew on plants in pots in-doors as well as in the open air; but I fancy the constant watering of Roses in pots, especially where liquid manure is used, helps to prevent the disease, and, therefore, it is less often seen in houses.—C. P. PEACHE.

To me it seems highly improbable that "D." of Deal's Roses were killed by *Coleosporium pingue*. I also greatly doubt the correctness of your editorial remark, which states this fungus to be "every year becoming more severe and destructive." However severely Roses may be afflicted with this parasite, I have never seen anything like fatal effects following its presence. I will give a case in point. Last year all the Roses in Mr. Smee's garden were literally powdered and blistered over in every part with this fungus; it not only burst through the cuticle of the leaves, but opened seams in the stems and distorted some of the flowers out of all shape. Now Mr. Smee, according to his own words, has "tens of thousands of Roses in flower at the same time," and yet as far as I have been able to see, not a single plant has been injured in the slightest degree, and, moreover, I have not seen a single orange fungus on his Roses this year.

Now, in your correspondents' column, your first reply from Mr. Radclyffe states that his Roses were never finer, and that he has but little fungus of any kind. There can be no doubt but last year the orange fungus was unusually abundant on Roses; and as far as my experience goes it has been just the reverse this year. About London sometimes a certain fungus is extremely common, and then we never see it again; sometimes it lasts a year or two, sometimes only a few weeks, whilst others are almost permanent denizens. It is manifest that the scarcity or abundance of any species depends upon delicate atmospheric influences prevailing at the time when

the spores are set free. If the weather is just favourable for their development they at once germinate, but if unfavourable they utterly perish by millions. We know on the authority of the Rev. M. J. Berkeley that healthy Roses have been infected with this fungus after being watered with water in which leaves infected with orange fungus had been placed. However undesirable this parasite may be in a Rose garden, one can hardly imagine its killing half the plants. As to a sure preventive against these attacks, it is quite a different thing; but Mr. Radclyffe gives some hints at page 120.—W. G. S.

LAST year my Roses were injured to a great extent by the orange fungus. A border of about a hundred plants on the Manetti stock was mulched with long litter from the stable; on these there was not a sign of fungus, but horse litter fell short, and I had recourse to the cow yard for the rest, about four hundred. Every plant was covered with fungus, and this time last year they were utterly leafless. This season I saved all my stable manure and used that alone, discarding the cow yard altogether; I have not a plant that is yet affected. Was cow dung the cause? I must add that this season I have kept the surface of the ground constantly moved with the hoe. The Briar Roses were not affected at all last season.

In the spring I had my Maréchal Niel Roses planted in the conservatory very much mildewed. I syringed them with half a wineglassful of Condry's fluid in four gallons of water; its effect was decidedly satisfactory, the foliage rapidly regained its freshness. If red fungus appears I fully intend to try Condry as a remedy; it is cheap, so that a free use of it with the syringe can be made. I shall anxiously watch the experience of other growers in conquering this pest.—STIFF SOIL.

[As the urine of the horse contains four times the amount of ammonia that is contained in that of the cow, the above facts would suggest that ammonia may be a preventive of orange fungus. Ammonia is certainly destructive of fungi.—Eps.]

SPIGELIA SPLENDENS.

THIS is a grand but little known stove plant, it belongs to the order Loganiaceae. It would appear that several species have highly poisonous properties, but I am not acquainted with a single fault in this plant. I believe it was introduced to Europe by my esteemed friend Mr. Wendland, Inspector of the Royal Gardens, Hanover, from whom I received it ten years ago, and it flowered with me in about twelve months. Everyone who saw it was enchanted with its surpassing beauty, and I have ever since been urging all plant-growers with whom I have come in contact to procure the plant. I have here and there found it, but it would seem to be somewhat difficult to procure. How is this? I hope it will not slip out of cultivation, as so many really good plants have done, for it is well worthy of a place in every stove.

It usually grows from 18 inches to 2 feet in height, producing in great abundance its dark green oblong or obovate leaves. The apex of each shoot is surmounted with numerous, recurved, one-sided spikes of bloom. The flowers are tubular, upwards of an inch long, set in a double row, and bright scarlet, except the mouth of the tube, which is white. It makes a handsome plant, and with me produces its richly-coloured flowers late in autumn and spring, but I have little doubt that by starting it early it might be flowered sooner if required.

It succeeds admirably in a mixture of loam, rough peat, and a little sand. When growing it may be watered freely, providing the drainage is good, and an intermediate house suits it well as regards temperature; in fact, I have treated it in every respect the same as the flowering species of *Begonia*. It continues in bloom a long time, and after the flowers are past the stems will gradually die away; when this occurs, withhold water to a great extent, but never allow the plant to become thoroughly dry. As soon as it shows signs of returning life, carefully remove old and worn-out soil, and repot, but do not shake it quite clear of the soil. It comes from Costa Rica.—EXPERTO CREDE.

AQUILEGIA CERULEA AND LEPTOCERAS.—I see no one has taken exception to the assertion of "EXPERTO CREDE" in your issue of August 1st as to the identity of *Aquilegia leptoceras* and *A. cærulea*. As I am interested about this tribe of plants I shall be glad of his authority. I grew *A. leptoceras*

long prior to the introduction of *A. cærulea* by Mr. Thompson, of Ipswich, and I believe them to be quite distinct, one coming from Siberia, the other from the Rocky Mountains. He has got confused between Fischer's plant (the true *A. leptoceras*), and Nuttall's plant, which is Torrey's *A. cærulea*.—A. R.

HABROTHAMNUS ELEGANS FRUITING.

If this beautiful Mexican plant could be induced to fruit freely, how much its value as a decorative plant, would be enhanced! Although it is a first-rate winter-flowering plant, it will bloom more or less all through the year, especially if vigorous growth is encouraged, and its shoots shortened and thinned out occasionally. If these conditions are carried out persistently the plant will set a few berries on shoots here and there; but what is wanted to make it doubly useful as an ornamental plant, is for its fruit to set in bunches or clusters of fair size and shape, and in quantities sufficient to attract one's attention; then gardeners might well say that they had one of the best plants that could possibly be found for conservatory decoration.

Habrothamnus elegans has fruited very fairly in the conservatory at this place for two seasons, and just now the plant is bearing some good-sized bunches of fruit quite equal in size, shape, and colour to those of the berry-bearing *Aucuba*. It is not the strongest but the medium-sized shoots that appear to set the best bunches of fruit. The plant will be found to thrive best for both flower and fruit if it be planted where it will have plenty of light and air but very little sun. Train it up a pillar or over a trellis, or even against a wall, and if planted in sound turfy loam, sand, and rotten manure, it will be quite at home, and will quickly repay any trouble that may be bestowed upon it. It must be plentifully supplied with water during its growth, and even manure water may be given occasionally. I have sometimes grown this *Habrothamnus* in pots for flowering twice a year, but I do not recommend such a mode of culture on account of its shy blooming, the plants being, I should say, too much confined at the roots.—THOMAS RECORD.

MERITS OF NEW ROSES.

I HAVE been looking anxiously to see what response is made to Mr. Peach's request in respect to some of the Roses I have recommended, but no one makes a sign. I received a letter a few days ago from Mr. William Paul. In it he says, "Perfection de Lyon, Madame Chirard, and Baron Chaurand have been first-rate with me." They have here quite justified my words. Baron Chaurand is not large, but it is a first-rate dark beauty. I think it is the best of the dark Roses. The other two are fine growers, of great size, of good form and beauty, and are eminently show Roses. Edward Morren and Marquise de Castellane have been grand, and are both good growers. I have had a very beautiful and perfectly-cupped bloom of Clémence Raoux. Its colour is creamy white, with a slight pink suffusion. It is one of the best light Roses that I have lately seen. Lords Macaulay and Herbert have passed an admirable degree. Devienne Lamy is bomb-shaped and fine.

The Roses, new and old, have bloomed here abundantly and magnificently. I never had them better. The first series is now over. People cannot judge from a solitary plant. I have thirty Perfection de Lyon, twelve Madame Chirard, and six Baron Chaurand to judge from.—W. F. RADCLIFFE.

MR. AYRTON AND DR. HOOKER.

A MEETING of a committee of Horticulturists and Botanists was called at the rooms of the Royal Horticultural Society at South Kensington on August 7th, 1872, for the purpose of discussing the recently issued Treasury minute relating to the management of the Royal Gardens, Kew. At this meeting G. F. Wilson, Esq., F.R.S., presided. There were also present W. W. Saunders, F.R.S.; T. Thomson, M.D., F.R.S.; H. Stanton, F.R.S.; John Standish; Andrew Murray, F.L.S.; J. B. Haig, M.D.; Rev. M. J. Berkeley, F.L.S.; W. Paul; T. Moore, F.L.S.; Prof. Thistelton Dyer, M.A.; Anthony Parsons, William Earley, John Peel, F. R. Kinghorn, John Lee, Robert Parker; Robert Hogg, LL.D.; George Smith, Charles Green, John S. Lane, John Richards, James Douglas, James Cutbush, Charles Lee, Thomas Perkins, Edward Rosher, Thomas Record; John Denny, M.D.; J. R. Fernyhough, J. Croucher, Henry Webb, John Fraser, John Laing, George Blenkins, and Maxwell T. Masters, M.D., F.R.S., Honorary Secretary.

The following resolution, proposed by W. W. Saunders, Esq., F.R.S., and seconded by Robert Hogg, LL.D., was adopted, and the Secretary was requested to forward a copy of it to the Right Hon. W. E. Gladstone, M.P., First Lord of the Treasury:—

"That this Committee gratefully acknowledge the consideration which the Lords Commissioners of Her Majesty's Treasury have paid to the subject of the future management of the Royal Gardens, Kew, as evidenced in the Treasury minute of July 24th, 1872.

"The Committee desire to express their sense of the important concessions made in support of the principle that the Director of the Royal Gardens, Kew, responsible for the good condition of the establishment committed to his charge, should have full control (subject to the appointed ministerial authority over all details and management.

"The Committee also desire respectfully to express their grave doubts whether the fourfold division of responsibility laid down in the Treasury minute, is likely to secure to the full the harmonious co-operation of the several officials.

"The Committee wish to call attention to the fact that the 'Pleasure Grounds' so called really form an important branch of the scientific department of the gardens, and constitute by far the largest and most important part of the arboretum, or named collection of trees and shrubs; and they are of opinion that to put such department under a different management from that of the rest of the scientific departments of the gardens is likely to be injurious to the interests of horticultural and arboricultural science.

"They would also wish to remark that, the 'nursery for young trees' alluded to in the minute forms no part of Kew Gardens, but is placed in the private grounds belonging to Her Majesty, and to which the public has no access.

"The Committee regret to find that there is no direct provision made in the Treasury minute for securing to the Director, in case of need, the services of an engineer specially versed in the management of hot-water apparatus as applied to horticultural purposes.

"And lastly, the Committee venture to hope that the same publicity may be given to any reply that the Director may make to the First Commissioner's 'Memorandum' as has been accorded to the original document."

TAUNTON DEANE FLOWER SHOW.

WHY is it that our southern and home counties are so put to shame in the matter of flower shows by other parts of England? Why is there not the same zeal in their cause in Kent and Sussex that there is in Somerset or Yorkshire? Take, for example, this Show, which I had the pleasure of assisting at for the first time. Why, the whole town was *en fête*. Triumphant arches, decorated houses, flags flying in all directions, booths set up like a fair, the carriages of the neighbouring gentry filling the streets—all testified to the fact that it was regarded as a matter in which everyone had an interest; and then, towards evening, multitudes kept thronging in, the whole place was alive, being regarded by them quite as much a holiday as by the gentlefolks who came in the earlier part of the day. How different is this to what we are in the habit of doing in our part of the world! And then let it be remembered that every town has its flower show, that there is no difficulty in obtaining subscriptions, and that all is done as if it were a real pleasure to have a hand in it.

With regard to the Exhibition itself, it gave conclusive evidence that good plant-growing is by no means confined to London, and that when the Royal Horticultural Society holds its shows in the provinces it has not much to teach either in plant-growing or management; in fact, it may learn a good deal on the latter point. The collection of stove and greenhouse plants, for which the liberal sum of £20 was offered, sent by Mr. Cypher, of Cheltenham, was very fine; while those exhibited by Mr. Saunders and Mr. Newton amongst amateurs were also remarkably good. Ferns were really grand, some splendid plants of *Adiantum farleyense* being staged; while in the Tricolor *Geranium* class there were some as well-coloured plants as I have seen anywhere this season. Our metropolitan growers might learn a lesson on the growth of *Achimenes* from those contributed by Mr. H. Badcock, so remarkably well were they done. With regard to cut flowers, when I say that Roses were exhibited by Mr. John Keynes, of Salisbury, and the Rev. J. B. M. Camm; Gladioli by Messrs. Kelway & Son; and Dahlias by Mr. Keynes and Mr. Kelway, I indicate enough the excellence of the exhibits. Fruit was also remarkably good, and so were the vegetables. There was a nice lot of Potatoes, amongst the handsomest of which was one from Sherborne called Lady Paget, and it was said to be as good as it looked, which is not always the case.

The arrangements were admirable. A good staff of clerks was employed, and before the gates were open all the cards, with the names of the exhibitors, &c., were placed; while the indefatigable Secretary, Mr. Saunders, seemed to be ubiquitous,

and by his courtesy and kindly manner contributed in no small degree to the success of the day. Happily the day was a splendid one, and all passed off well. I may add that a little impromptu meeting was held by a few of us who love the Rose, and that it was determined to start a Western Counties Rose show, to include the counties of Wilts, Dorset, Somerset, and Devon, in which the exhibition is to be held in turn; that a guarantee fund was commenced; and, knowing what I do of the energy of those who have taken it in hand, I have little fear of its success, —D., Deal.

GREEN ROSES.

WE give a woodcut of what is rather a curiosity in the gardening way, a perfectly green Rose, which has been sent us by Mr. J. Smith, seedsman, Romford. Green Roses, or rather green-centred Roses, have certainly been known for some time, but the specimen sent us was larger and more perfectly green for its size than we had ever seen; moreover, the flowers are the same every year. Those who like to cultivate curiosities in the floral way may be interested in growing it, and it is still more interesting as an illustration of morphology.

NOTES AT THE HIGHLAND SOCIETY'S SHOW AT KELSO.

BEING at Kelso at the time of the holding of the above Show, I thought I would look in and take note of anything appertaining to floriculture and gardening in general, the more especially as I was told there was a "proper" flower show within the space occupied by the Highland Society.

Of the Show "proper" I confess I was much disappointed, there being scarcely any novelties, and many of the classes for flowers and fruit being almost beneath notice, some of the trays of Roses, for instance, not containing one good flower; so with Pansies, Phloxes, African and French Marigolds. The Stocks and Pentstemons were singularly deficient of compactness, as also the Antirrhinums. Nor was the general collection of plants good, or, as a rule, well grown. The only novelty in flowers was a double *Lilium auratum*.

Amongst the fruit the Raspberries took a foremost place, being fine, as also some dishes of Red Currants. Amongst the Grapes Mr. W. Thomson showed a nice bunch of his new Grape the Duke of Buccleuch. It is a white Grape with large roundish berries, and I think it is likely to be found a serviceable variety; though one could scarcely judge, as the specimen shown was not ripe, though, from the taste I had of it, I think, if so, the flavour would prove agreeable. I may also mention as deserving of praise a tray of double *Petunias* exhibited by Mr. Brown, of Tweedmouth; these were large, varied in colour, and good; but on the whole the Show to my thinking was exceedingly poor and almost devoid of interest.

Turning from the Show "proper," I came upon a large stand and collection of evergreens, flowers, &c., belonging to that well-known firm, Messrs. Stuart & Mein. Under their awning was a fine collection of Ferns, Saxifrages, *Sempervivums*, seedling *Tricolor*, *Bicolor*, *Bronze*, and other *Geraniums* in large quantities and many varieties neatly arranged with other bright-foliaged plants. In front of these in an enclosed space were in tubs a number of specimens of the rarer kinds of *Coniferae*, such as *Abies inverta*, a fine weeping sort; *Picea nobilis* with its deep blue foliage, said to be true, though by some described as glauca, with a couple of score others equally good. Adjacent was the stand of Messrs. Little & Ballantyne, of Carlisle, who exhibited amongst others plants of *Wellingtonia gigantea variegata*, *Thuja occidentalis pendula*, *Retinospora plumosa aurea*, *Pinus Balfourii*, *Pinus monophylla*, and others; but the cream of their collection was their novelty, *Wellingtonia gigantea pendula vera*, a drooping variety of the *Wellingtonia* of very graceful habit, which no doubt will take its place in every arboretum of any pretensions for its extreme elegance. This firm also showed some very excellent seedling *Petunias*.

Before closing my notes I think I ought to mention the excellent collection of glass ornaments mostly applicable to table decoration, exhibited by Mr. Jenkinson, of Edinburgh, many of which were new and elegant in design. But perhaps the newest of the new, and not the least beautiful, were his semi-biscuit flowers arranged as flexible wreaths. Those representing the *Maréchal Niel* Rose, though pure white, left no doubt in the beholder's mind, as the modelling was so true to nature; and I venture to predict that these wreaths and spray will find much favour, the tinted, coloured, and white, in helping our



in-door decoration when natural flowers are scarce. In taking leave of the Kelso Show, I felt that the three stands I have mentioned were more instructive and interesting to the general observer than the flower show "proper;" the latter, I take it, is capable of vast improvement.—F. R. H. S.

PITFOUR.—No. 2.

THE SEAT OF COLONEL FERGUSON.

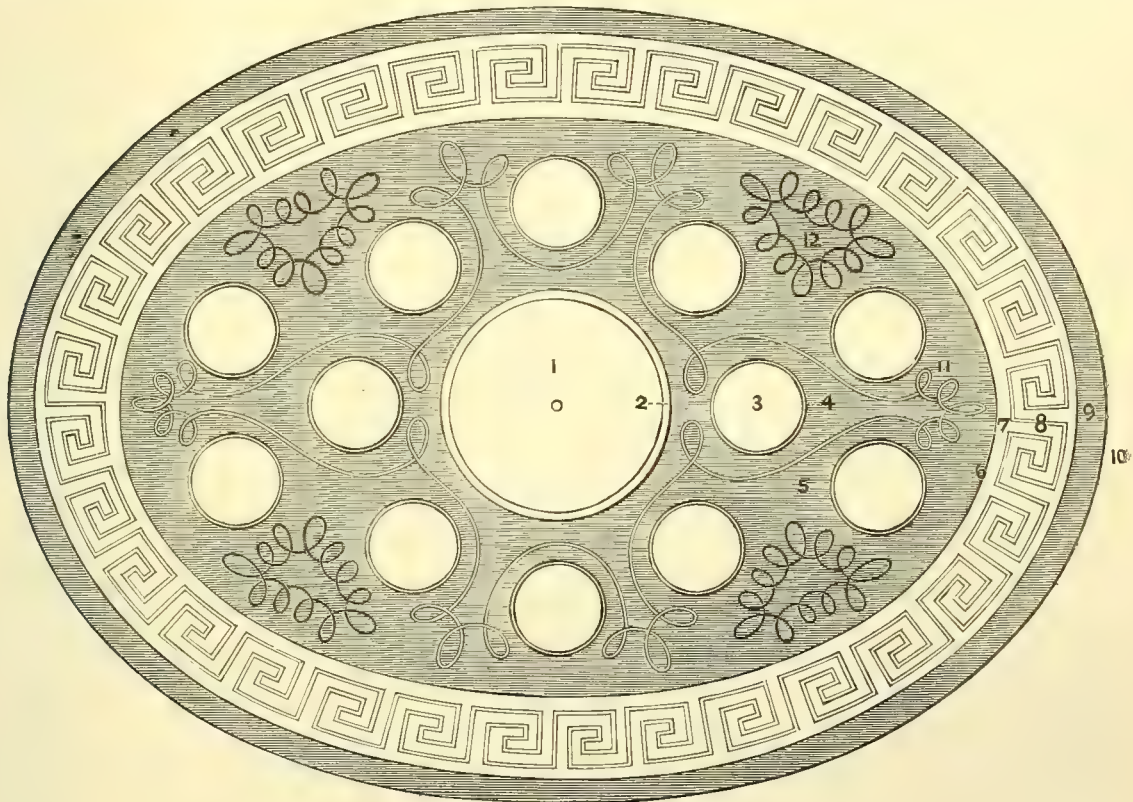
In the centre of the grove, described last week, is a garden which was planned by Mr. Robson, and, as will be seen by the accompanying engraving, it is a masterpiece.

Leaving this and the Temple Garden on the right, and

crossing the stream by a bridge at the south end, we pass through a light fence by a small gate, separating the grounds from a large pasturage in which hundreds of sheep are pastured. The next prominent object is Saplin Brae House, leased by Captain Blair, which has altogether a very tasteful and pleasant appearance. Stately Beeches are studded all over the pleasure ground; but passing these by, we come to the turnpike, about a mile further westward than the point at which we entered. Almost directly opposite is the kitchen garden. Before entering it, however, I must observe that from this spot a glorious prospect bursts upon the eye—that of the luxuriant valley of Deer. The view to the south is pleasing. There is a hollow through which a stream takes a serpentine course; and beyond, on a gentle eminence, is situated the ancient village of Old Deer, which contains but few houses, but these are neat, and the whole is surrounded by beautiful

plantations and large spreading trees. The soft and hilly slopes ascending in the background, with their varied outline and wood-clad summits, have a very picturesque appearance. Aden House, with its surrounding plantations, is just visible to the east; and to the west is a fertile country, the most conspicuous part of which is Aikiey Brae, where Robert Bruce defeated Comyn, Earl of Buchan, in a stoutly-contested battle. The whole district is dotted with clumps of trees, and presents an appearance of superior cultivation, being laid-out in farms of from seventy to two hundred acres, with small crofts here and there.

The kitchen garden (see page 134), stands on the south side of the turnpike, descending to the north bank of the river Ugie, and is sheltered from the north and north-east by the beautiful old timber covering Saplin Brae, which rises abruptly from the north side of the turnpike. The garden is surrounded



POLYCHROME GARDEN AT PITFOUR.

- | | | | |
|---|----------------------------|----------------------------|---|
| 1, Bed of shrubs, centre a large vase. The other circles are also planted with shrubs and other plants. | 2, Grass verge. | 6, Verge of grass. | 10, Gravel walk. |
| 3, Beds of shrubs. | 7, Broken bricks. | 7, Broken bricks. | 11, White stones. |
| 4, Verge of grass. | 8, Grass, Grecian pattern. | 8, Grass, Grecian pattern. | 12, White stones, broken about the size of a hen's egg. |
| 5, Broken slate. | 9, Grass border. | 9, Grass border. | |

by substantial stone walls, with an efficient coping, 18 feet high on the north side, 14 feet high on the east and west sides, and 12 feet high on the south. The area enclosed is upwards of four imperial acres. Originally the extent of this garden was more than nine acres. It was laid out about the beginning of the present century, and has ever since held a high position amongst gentlemen's gardens in the north. It is in the form of an irregular quadrilateral figure, laid out in seven plots, as will be seen from the accompanying plan.

A range of glass houses, over 350 feet long, and varying from 20 to 12 feet wide, extends along part of the north wall, and these I visited first. The greenhouse, which stands with its gable to the north wall, is 26 feet long by 20 feet wide, with centre and side stages. On the centre stage I observed a good plant of the Double White Camellia, as also a collection of choice Fuchsias, mostly pyramid-trained, ranging from 2 to 7 feet high. Among the Coleuses were excellent plants of the newest varieties, with the leaves well coloured. There are also on this stage some good greenhouse plants. On the side

stages were thirty choice varieties of Tricolor Geraniums. Some were trained as pyramids, some as half-globes, and others in the round table shape; all were highly coloured. The diameter of the plants ranged up to 2½ feet. Of other varieties, such as double Geraniums and the Zonal section, there was also a choice collection. Ferns were well represented, and in the best of health; there were also some good specimens of young Heaths in flower.

Leaving the greenhouse by a door in the east side, we enter the stove, 32 feet long by 12 feet wide; it is fitted up with side stages. The back wall is covered with climbers, such as *Allamanda nobilis*, *Euphorbia jacquiniæflora*; and on the back stage is a good plant of *Clerodendron Balfourii*, trained in the pyramid shape on a wire frame. Of *Caladiums* there is a collection of well-grown plants, including such as *C. argyrites*, *C. Chantinii*, *C. pæcile*, *C. Belleymei*, *C. Houletii*, *C. picturatum*, and *C. Wightii*. I observed some healthy clean-grown plants, and although young, promising well. Amongst these were *Maranta regalis*, *M. Veitchii*, *M. zebrina*, *M. rosso-lineata*

illustris, picta, Porteana, and Lindeni, besides some species of less note. There were good plants of *Croton variegatum*, *C. angustifolium*, *Sanchezia nobilis variegata*, *Anthurium cordifolium*, and *A. Scherzerianum* (the last-named had the remains of twelve spikes of blossoms on it), *Sphaerogyne latifolia*, *Alocasia metallica*, *Eucharis amazonica*, a splendid young plant of *Cyanophyllum magnificum*, beautiful pans of *Fittonia argyrea*, and a good little plant of the *Eriocnema marmorata*. On the rafters were trained *Stephanotis floribunda*, *Cissus discolor*, *Clerodendron Balfourii*, and a few *Hoyas*.

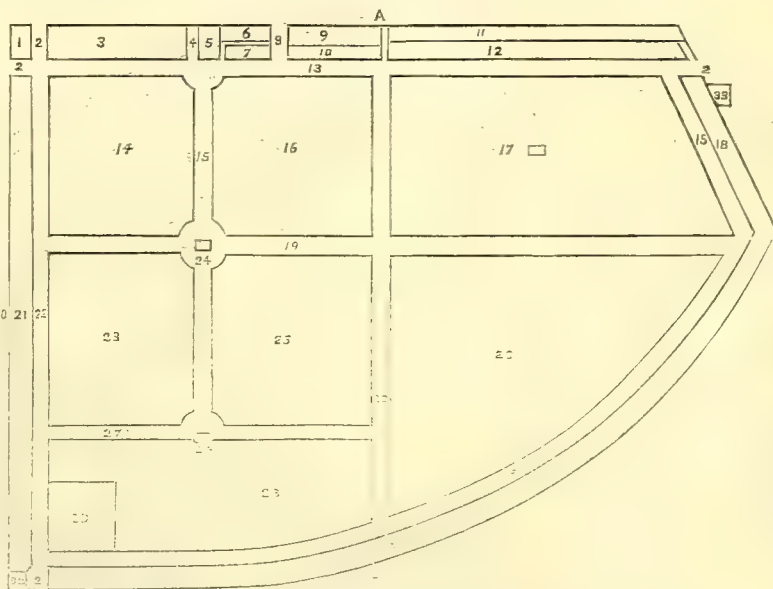
Among the Orchids I observed *Cypripedium insigne*, *C. purpuratum majus*, *C. Veitchii*, *C. venustum*, *C. barbatum*, *Stanhopea oculata*, *S. tigrina*, *S. oculata lutea*, *S. maculosa*, and *S. grandiflora*, suspended in baskets from the roof, and coming into flower; *Saccolabium guttatum* in flower, *Aërides affine* also in flower, *Dendrobium nobile*, *D. densiflorum*, *Oncidium*

flexuosum in flower, *Peristeria elata* (the Dove plant), and *Cœlogyne pandurata*.

Of Ferns the collection is good, comprising many of the newest and rarest, and the whole in fine health and very clean.

Turning to visit the Cucumber pit, 12 feet wide by 28 feet long, we pass to the east side of the main entrance, and enter a line of continuous glass houses, 270 feet by 12, divided into six compartments. The first three compartments consist of a Peach house and two vineries: there was a prospect of a good crop of Peaches, and the Vines promised a fair yield. This house is in rather bad repair, but I believe it is to be renewed by-and-by. The remaining portion of this line of houses, 180 feet long by 12 feet wide, with a hanging roof, is in excellent repair, and divided into three compartments. The first two are Peach houses, with the appearance of an abundant crop. The third compartment is the Plum house; the trees

- A, North wall, 375 feet long.
 B, South wall.
 1, Plot, 14 by 26 feet.
 2, Gates.
 3, Vegetable border, 104 by 26 feet.
 4, Walk, 7 feet wide.
 5, Greenhouse, 20 by 26 feet.
 6, Stove, 28 feet by 12.
 7, Cucumber pit.
 8, Entrance, 16 feet wide.
 9, Peach house and vinery, 90 by 14 feet.
 10, Vine border, 90 by 12 feet.
 11, Two Peach houses and Plum house.
 12, Vegetable border, 180 feet by 14.
 13, Walk, 8½ feet wide.
 14, Strawberries and Gooseberries; flower border on north and east sides, and on east side, inside flower border, line of pyramid Apple trees.
 15, Walk, 10 feet wide.
 16, Strawberries, Gooseberries, and Onions; flower border on north and west sides; pyramid Ap-



Pitfour Kitchen Garden.

- ples on west side inside flower border; Beech hedge next walk (22).
 17, Grass plot with vase in centre; flower border on north side.
 18, Vegetables.
 19, Walk, 7 feet wide, 500 feet long.
 20, West wall, 382 feet long.
 21, Border, 14 feet wide, 334 feet long.
 22, Walk, 7 feet wide.
 23, Vegetables, with flower border next walk (15), and a line of pyramid Apples inside.
 24, Vases.
 25, Gooseberries and Black Currants; flower border next walk (15); pyramid Apples inside.
 26, Strawberries.
 27, Walk, 8 feet wide.
 28, Vegetables.
 29, Melon bed.
 30, Walk.
 31, Two lines of Raspberries, Red Currants next wall.
 32, Tool house.
 33, Gardeners' bothy.

are lately planted, but promise well. Along the south side of this last house is a line of dwarf pyramid-trained Pear trees, many of them heavily laden with fruit.

I felt satisfied with the order and healthy appearance of everything in the garden, with the exception of some old Apple and Pear trees covering the east and a portion of the north wall, and the hedging extending down the side walk No. 3 from the west, which has a few gaps in it. A panelled border in lozenge-shaped figures skirts both sides of the second walk from the west. The lozenges are 9 feet by 11, and edged with *Cerastium* and *Beet*, the centres various *Geraniums*, *Calceolarias*, and *Verbenas*, and the whole is carpeted with *Lobelia speciosa*. On each side of the walk, behind the flower border, is a line of pyramid-trained Apple trees, with the ap-

pearance of a good crop. There are many tastefully-arranged ribbon panels and flower borders which a want of space prevents me from describing. The west wall is covered with fan-trained Pear and Apple trees, which, though young, are promising well.

Beyond the west wall is the Abbey of Deer, a hoary ruin of former greatness; Ivy has almost entirely covered its walls. This abbey was founded by William Comyn, Earl of Buchan, in the thirteenth century. Cistercian monks first resided at the abbey. The walls are built of red sandstone.

After saying good-bye to Mr. George, the gardener, who accompanied me on my tour of inspection, and who is a man with a clear head and great knowledge, I left Pitfour thoroughly satisfied with the pleasant day I had spent.—JAMES BRUCE.

GARSTON VINEYARD.

I, an old subscriber to "our Journal," accompanied by Mr. G. Davies, nurseryman, of Birkdale Park, have journeyed to Garston for the purpose of visiting the far-renowned vineries of Mr. Joseph Meredith.

The ground occupied by Mr. Meredith is of considerable extent, but the passer-by on the public road would not suspect that behind the tall and well-kept Hawthorn hedge which encloses the Vineyard there existed such an establishment. The vineries are thirty in number, varying, of course, in size, but mostly of very considerable dimensions, the two larger houses being respectively 144 feet long by 25 feet wide, and 202 feet by 45 feet; the latter such a structure as many towns would be glad to possess as a railway station.

On stating our business at the counting-house we were most obligingly conducted through the establishment by one of Mr. Meredith's sons. Mr. Meredith is celebrated as one of our

principal growers of Grapes for sale, and by his skill in their culture has taken prizes in Belgium in competition with Continental exhibitors. The Garston Vineyard being on so extensive a scale, Mr. Meredith has the advantage of growing each principal description of Grape in a separate house, which greatly adds to their perfection.

There are no less than seven large structures devoted to the Grape. In the first house visited, which was 78 feet long, Black Hamburgs, almost ripe, hung in luscious bunches, the berries large, and the crop a valuable one. The next house was occupied by the Muscats, of which there was also a large and splendid crop; and in a congenial position was a large Fig tree loaded with fruit. Another house, 144 feet by 25, was filled with Syrian Vines, the Grapes on which were in a forward state; and on the stages on each side were countless pots containing Azaleas whose blooming season was over.

The next house inspected was the large one alluded to above—the Crystal Palace of the group—and at the entrance of this was a gigantic specimen of the Sooly-Qua, or Chinese Cucumber, the fruit being, when full grown, 6 feet in length. The growth is very rapid, some Cucumbers not more than a week old having already attained the length of 24 inches, and a profusion of flowers covered every stem of the plant, which was carefully trained to a lofty trellis. On inquiry we were informed that the flavour of the Cucumber is “flat,” but that in China it is much relished, being there boiled and eaten with rice. In this house was a tempting crop of Pine Apples in every stage of growth; also hundreds of young Vines in pots. In other Grape houses were successional crops of late Grapes—Lady Downe’s, Alicante, Mrs. Pince’s Black Muscat, &c.

Hitherto Mr. Meredith has confined himself almost exclusively to Grape-growing, but recently he has turned his attention to floriculture as well, and in one of the small houses was a magnificent stock of an old, but now somewhat neglected favourite, the Balsam. In another house was a large assortment of Fuchsias, well trained, and, by the appearance of the foliage, of most healthy growth. The fernery appeared to be stocked with a choice collection of Ferns. In the stove were numerous specimens of Nepenthes, or Pitcher Plants; I noticed also, a fine *Stephanotis floribunda*, the branches from which extended upwards of 40 feet along the supporting wires. *Bougainvillea glabra*, with its singularly beautiful bracts, was also there in vigorous growth.

Out of doors the frames, &c., were crowded with thousands of Pelargoniums, Coleuses, and other bedding plants, and a large space of ground was laid-out as a rosery. Altogether nearly two hours were most agreeably spent at The Vineyard.—*TXPO, Southampton.*

P.S.—On the parsonage green of the village is a cottage, in front of which is a Vine said to be three hundred years old. The stem is about a foot in diameter, and although rugged and perforated in several places, it still spreads its branches luxuriantly over the adjoining cottages, and produces a yearly vintage of Grapes.

TRIAL OF BOILERS AT BIRMINGHAM.

In consequence of some advertisements and letters appearing in the horticultural press representing that the Royal Horticultural Society gave medals and appointed judges for the recent competition of boilers at Birmingham, I am directed by the Council of this Society to ask you to be kind enough to make it known that they had nothing to do with the awards made, nor the appointment of the judges, neither was any medal of the Society given to the competitors.—JAMES RICHARDS, Assistant Secretary, Royal Horticultural Society, South Kensington.

LARCH AND WOODEN PAVEMENTS.

THE Pendulous Larch (*Larix pendula*), sometimes called Red Larch, has been highly extolled for many uses, as a durable and valuable timber tree. But I do not recollect of much having been said about its superiority for wooden pavements. It is hard to split, very tough, quite durable, free from swelling or shrinking, and will not rot for many years. Therefore, if sawed into blocks about 10 inches in length, more or less, and made either 4 or 6 inches square, or round, and set on end, it will make a more excellent pavement than any other kind of wood. The corks of the horseshoe will not chip it, and it will wear longer and keep in better condition than any other timber now used for that purpose. When green, a cubic foot will weigh from 33 to 36 lbs., and after being thoroughly seasoned for two or three years, will yet weigh from 30 to 33 lbs., showing a very slight shrinkage in both size and heft, while most other kinds of wood will lose in drying from one quarter to a third their original weight, and considerably in size. On this account it is also valuable for floor plank, and all kinds of building timber, especially for beam timber on which to lay the floors. Pine, oak, and white wood will shrink so as to crack the plastering or draw the base boards away from the floors, which is very injurious to a first-class house.

NOTES AND GLEANINGS.

WE have received the following from “D., Deal.”—“I have heard that my excellent friend Mr. Jones, the gardener at Lord Leconfield’s, Petworth House, has been appointed

HER MAJESTY’S GARDENER AT FROGMORE in succession to Mr. Rose. As I have had the pleasure of his acquaintance for a number of years, I can safely say that no more worthy appointment could have been made, and I cannot but rejoice that he is now, in the full vigour of life, placed where his abilities will have full scope, and in a position where he will necessarily be brought more into contact with the gardening world generally.”

—METROPOLITAN FLORAL SOCIETY’S SHOW.—This is to take place at the Crystal Palace on the 28th and 29th inst., and in addition to the liberal schedule for cut flowers, there is an equally liberal one for fruit, the Crystal Palace Company having decided to revive their fruit show; and from the number of entries already received, and the character of the season, we can confidently predict a successful exhibition.

—THE Report of the Government CINCHONA PLANTATIONS at Ootacamund in India for 1870–71 states that the growth of the plants has been very satisfactory. The older shrubs have grown into trees 22 to 23 feet high, and 18 to 21 inches in girth. Of the *Cinchona succirubra*, the finest samples reach a height of 30 feet, with a girth of 3 feet. Amongst the new species of plants lately introduced is the Pitayo bark, which appears hardy and well suited to the climate. During the year 51,353 lbs. of fresh bark were supplied to Mr. Broughton, the Government quinologist, for the manufacture of amorphous quinine. From one thousand eight-year-old plants of the *Cinchona succirubra* as much as 2560 lbs. may be expected to be extracted this year. This average of more than 2½ lbs. to each tree will yield, at the present rate of 2s. 8d. to 3s. per lb., a clear profit of at least 2s. per lb.—(*Nature*.)

—At the Nursery, Huntingdon, on the 8th inst., Mrs. Wood, aged 83 years.

WORK FOR THE WEEK.

KITCHEN GARDEN.

GET more Cape Broccoli and Cauliflower out in warm situations, and hoe through former plantings, watering also when necessary. Late *Celery* must be planted out—the final planting—taking care to water it frequently. Other *Celeries* growing fast must be soiled in due time, taking care not to add too much soil at once. About 2 inches in depth once a-week is a good maxim, and it is an excellent plan to give a thorough soaking of manure water the day previous to soiling. The slug defaces the stalks much. It is also a good practice to give the plants a thorough liming previous to the first earthing. Let the Horn Carrots for drawing young be thinned and weeded. To those who would insure a constant succession of the choice kinds of vegetables and salads, the next fortnight will be the most important of the whole year. *Endive* planting must now be proceeded with in earnest, for what is now planted will constitute the great bulk of the autumn and midwinter salads. Let elevated beds of 4 feet in width and possessing a bold curvature, be provided in an open and dry situation. Such beds should be a foot or more above the ground level, and must be made very rich. These beds may be hooped over at the end of October, and be readily covered with mats when frost arrives. Let ripening *Onions* be bent down in order to get the ground clear for Winter Greens. *Winter Spinach* for the whole winter supply must be sown from the 7th to the 15th of the month, according to the situation.

FRUIT GARDEN.

The preservation of wall fruit from birds and insects should occupy attention. Worst of other small-mesh netting may be employed with advantage to protect Green Gage or other Plums, the scarcity of which fruit this season invites such precautions. Look carefully over Peach and Nectarine trees, and remove nails which are near to the swelling fruit. In stopping and arranging the wood let only such as can conveniently be laid-in be allowed to remain. It is also an error to retain a large amount of wood, to be removed inevitably in the winter pruning; an undue excitement and extension are given to the roots, which with a superabundant supply of sap, induce in the spring the growth of rank and unmanageable wood. Pear shoots which have been left or only partially shortened should now be pruned to three or four eyes. Proceed with Strawberry planting. Remove runners from established plants.

FLOWER GARDEN.

This year’s beauty should assist to suggest next year’s improvement in the distribution of the masses in the flower garden. Attention should be given to insure duration of bloom, habit, and colour in the different plants, and another arrange-

ment planned for a future season. The propagation of Scarlet Pelargoniums, Verbenas (for stock plants), and Calceolarias should commence. China Roses should be put in, and budded stocks examined, bandages removed, and failures replaced. Mark the best Hollyhocks for seed. I am glad to see that this magnificent flower is likely to meet with the attention its beauty well entitles it to. Attend to the routine of staking, pegging, and the general security of fragile plants. We are now rapidly advancing in the Dahlia season, and the amateur's attention must be specially directed to this splendid autumnal flower. As seedlings advance for blooming, it will be advisable to disbud so as to get the blossoms as fine as possible for exhibition, recollecting that the weakest plants usually produce the best flowers. Many contrivances are in use for protection against sun, wind, rain, and vermin, which all at certain periods act detrimentally. After all the endeavours to entrap earwigs in the immediate locality of the plants, still as these destructive insects fly, their visits can never be effectually guarded against unless the blossoms are bagged. Very fine point net lace is generally used; this allows the flower all the air possible, and at the same time effectually excludes the insect before alluded to. Haythorn's hexagon netting will be found useful for the purpose, though, perhaps, it should be of the smallest mesh. It must cover the flower and should be fastened round the stalk; the bloom must then be protected by a cap with a spring at the back, which adjusts it at any given height. The continued rain has precluded the necessity of watering, but it will be advisable to mulch the surface of the soil with very rotten manure, and to pay strict attention to the lateral shoots of the plants being secured. Prick-out seedling Auriculas and Polyanthus; the latter may also be parted, and will get well established before winter.

GREENHOUSE AND CONSERVATORY.

Should the weather continue unsettled it will be an advantage to many delicate plants to give them an early introduction into the conservatory. It is better always to anticipate an evil by precaution than to supinely await its arrival. The continued humidity and gloom of the weather may well originate apprehension for tender, when even hardy plants are suffering. The gaiety of the show house should not be allowed to decline while the common resources of Fuchsias, Verbenas, Achimenes, and Scarlet Pelargoniums are in hand. The delicious fragrance of Lillium tuberosum should always be secured at this season for the conservatory. Let all the faded blossoms be constantly removed, straggling growth pinched, and exhausted stock cut-in previous to making a new growth. Let it be remembered that the autumn is fast approaching, and that the sooner new growths are encouraged, in order to become somewhat hardened, the better. Successions of Brugmansias, Clerodendrons, Euphorbias, Poinsettias, &c., should receive a last shift, in order that they may produce a rich display in the conservatory. Climbers on ornamental trellises should be occasionally cut back, with the view of having a succession late in the season when flowers become scarce. A batch of such plants as Thunbergias, Ipomæas, Stephanotis, and Passifloras, should be got up ornamental trellises without delay. Clematis bicolor and C. azurea grandiflora force well in early spring; rest them behind a shady wall in June and July, and they will flower again in October and November. The Clematises, although perfectly hardy, are well adapted for conservatory trellises. Chrysanthemums should now receive their last shift, if possible, using chiefly sound fibrous loam for the purpose with plenty of charcoal. This is the best way to keep them stiff in habit, and to preserve their leaves. Any necessary amount of strength may be imparted to them when the flower-buds are formed by good liquid manure. Let adequate provision be made for the prolonged supply of small flowering subjects, such as Primulas, Phlox Drummondii, and Cinerarias.

STOVE.

This house should be particularly well aired at this season. Shade less; indeed, while gloomy days prevail, withhold shading altogether, and apply less humidity. It is better to apply gentle fires with abundance of air night and day, than to finish the season with immature growth. Withhold water altogether for a short time from those that have quite finished their season's growth, having previously gradually lessened the supply from time to time. Place the plants at the coldest and driest end of the house if no other resting structure is at hand. The absence of bright sunshine will more especially render it desirable to expose all plants to the little sunshine we have, in order that the shoots may be ripened before the approach of winter. It is a great error to keep plants that are required to

produce a profusion of bloom during the following spring and summer actively at work late in the autumn. Summer is the season when rapid development should be promoted, and autumn the period when the young wood should be completely hardened and ripened preparatory to the approach of winter.

PITS AND FRAMES.

Some of the first struck cuttings will now be fit for potting off. Place them in a pit or frame; shade, keep them close until they are rooted, when they should be set out to harden previously to being stored up for winter. Continue to put in cuttings, more particularly the best kinds of bedding Pelargoniums, which ought to be struck as soon as possible.—W. KEANE.

DOINGS OF THE LAST WEEK.

COMET or no comet, never was there more distracting weather—rain, not in drops but in sheets, threatening to lay everything prostrate, and the lurid lightning to burn all up, and yet, after all, in our neighbourhood but little injury has been done. Of course, where the crops were very thick and heavy the rains and winds twisted them and laid them down, so that reaping machines could not be much used, and the old sickle had to be employed instead.

Piecework.—Many good men, especially the proprietors of small gardens, have consulted us as to piecework, and we have been obliged to tell them we could not help them. Large jobs in a garden might be let on piecework to the advantage of all concerned—as men will and ought to work for themselves better and more heartily than for a day-labour employer; but in the routine of a garden it is next to impossible to get work done on the piecework principle, because a man must have so many little things to attend to, and no conceivable reckoning could come in justly to allow so much for this, and so much for that. In the general routine of garden work nothing will be more satisfactory on the whole than wages by the day or the week. Fresh work in laying out, &c., is a different affair.

One matter, however, ought to be seen to in gentlemen's gardens, and that is, independent of strikes and all their evils, some knowledge must be had of the abilities of the workmen. We have sorrowfully parted with men to better themselves, though we felt the extra money would have paid as well here as elsewhere. There is a mistake here which ladies and gentlemen, we hope, will learn to rectify. We have had many men all receiving the same money on Friday night, the right night to pay labour, and we felt when paying all alike that some men were worth any two of the others. We have never been able to do as much as justice required in this direction, and servants never can do what masters can; but there is neither reason nor justice in paying all assistants alike, whatever may be the distinguishing characteristics of the men. Besides, an active energetic man has no stimulus to bring out his energy and activity. "I get no more than that sleepy-headed, woolly-fingered fellow, who never wants a handkerchief in the hottest day. A little sweat would be poison to him."

We throw out the hint because we have never been able to satisfy ourselves. We are quite sure that in piecework some men in gardens, if they acted as they generally do, would easily double the wages of some other men.

Independent of present appearances, we do hope that the harvest will be profitable to all concerned, as so many depend on a few weeks' extra labour now to clear off all scores at the shop, pay the rent, and get shoes and clothing for the youngsters. The more we see of the working of everyday labouring life, the more we are convinced (of course with certain unfortunate drawbacks) of the sterling honesty of purpose of the great mass of general labourers in fields and gardens.

KITCHEN GARDEN.

See previous notices. We dug ground which had been cropped with early Peas, and planted with Winter Greens, Lettuce, Endive, &c. We would refer to what we lately stated about plants of Cauliflower and Broccoli turning out badly. Ours have required much supervision, and we have been short of Cauliflower in consequence. Fine large plants have not a bit of heart in them. We cannot assign the reason, but true it is that great numbers of plants of the Cabbage tribe seem to have lost the terminal bud. It is of no use leaving them, as the plants will come to nothing. This day we have pulled up some hundreds of Cauliflowers which ought to have shown signs of heading. We are rather surprised that some of our contemporaries have made no allusion to the subject. Well, perhaps they do not like to confess themselves beaten as we do;

for we know nothing of the direct cause of this evil. One of our men told us yesterday that he pulled up more than three-fourths of his winter stuff. Will not some clever scientific man endeavour to help us? We confess ourselves beaten.

Red-leading Seeds.—We mentioned one case in which red-leading was not effective in keeping birds, mice, and rats from the seed. We were doubtful then if our instructions were carried out, as we could not see the marks of the red lead on the seeds half, or more than half, eaten. We did not see them sown; since then we have not had a seed touched, whether of Peas, Beans, Cabbage, or Lettuce; but, of course, after the plants were up and growing freely they had multitudes of enemies. Still, on the whole, we are more convinced than ever that red-leading seeds is the best preservative until they arrive at the seedling state.

FRUIT GARDEN.

We have turned out a number of Strawberries from pots. We gave the ground a good coating of short grass, dung, &c., treading down, as the plants will stand two or three years, and as we have long been convinced that to have first-rate Strawberries out of doors there must be rich deep feeding for the roots, and rich mulching at the surface. Finished layering for forcing Strawberries.

Some of our first planted forced Strawberries are now in bloom. But for press of work we should have had many more, and when time can be given they do come in well in the autumn.

Orchard House.—We gave an extra watering with sewage, as the trees seemed to require some help. Went over the trees again, and removed some two bushels of fruit, chiefly Peaches and Nectarines, thus so far showing the importance of a glass covering. A thorough watering now will aid much in swelling the fruit. Care must be taken not to overdo the watering, otherwise the fruit will be thrown off after being duly thinned. We have two cool houses; one we shut up early, and we are now gathering from it; the second we wish to keep as late as possible, and from it we generally manage to gather Peaches and Plums later than from the wall and open border.

If after these deluges of rain the weather should be sunny and warm, it would be advisable to daub all empty spaces in fruit houses with flowers of sulphur made into a paint with softsoap water. Prevention is always better than cure.

ORNAMENTAL DEPARTMENT.

No weather could have been worse for mere flowering plants out of doors. A few bright days, however, will make all right again. Just now the flowers are nowhere. We took some trouble in plunging Chrysanthemums and Salvias, so as to save watering. It is as well to place a tile or slate below the bottom of each pot.

Sedum acre (Stone-crop), how kill it? Some may say, How get such a pretty, yellow-flowering succulent to live? Well, with only the smallest quantity of decayed vegetable matter it will thrive on tiles, slates, cement, bricks, or almost anything, and thus used many an outhouse, shed, or coal place in our large towns may have a roof like a dense green carpet all the season, except when the plants put on their bright yellow livery in the summer months. Once let it take hold and it will need no further trouble, but look after itself, without even requiring a pail of water, for it will absorb enough from the atmosphere to keep it healthy. In our case we want to get rid of it from a walk in the pleasure ground. Years ago it settled on a space of 2 or 3 square yards. We had it hoed and raked on sunny days, we extra salted it, at other times we took the surface gravel away, and, as we thought, all trace of this little succulent, but, in spite of us, ere a month or two had gone, back again came our unwelcome friend. Ere now it threatens to take possession in time of the whole walk. The smallest bit will grow, and though scuffling and salting will brown up the old plants, we suppose that neither has the slightest effect on the seeds. We shall salt and fresh-surface again, but we have no faith in thus being able to destroy it. We could without much trouble easily obtain a Sedum walk. Will any reader tell us what more we can do? One year we dug over a piece of the walk, thinking thus to bury plants and seeds deeply enough, but that was of no use, as in a short time young plants appeared as thickly as ever on the surface.

Lawns are looking very well, but they give endless labour this moist season, and all the more as we had relaid a great portion last year, and were forced to use additional soil to attain the regular sweeps, but it was of a richer nature than we liked for such a purpose on our heavy ground. On poor soil the rich earth would have been excellent.

We may just say a few words in answer to many inquiries as to renovating old and unlevel lawns. The best made will have inequalities in the course of time, and these, besides being unsightly, cause much extra labour either to scythe or machine. Several who wished to amend their lawns in this respect were horrified at the plan here adopted of taking up a good space at a time, so as to see all the inequalities (and that is the best way to see them), and then sweeping the line over to get the uniform level before the turf, cut to an equal thickness, was laid down again. They proposed lifting and laying down the worst bits. Now, we can only say that that mode will rarely prove satisfactory, and before all is done it will be found that little has been gained in labour. Judging from our own practice, if a fine level or regularly sloping lawn is desired, and there are many inequalities, we should, early in winter, take up the turf, and after levelling lay it down again. It will then have a beautiful uniform surface, which it is next to impossible to give it by the most careful piecing. If such work is not done in winter, it should be done early in the spring, so that the grass may gain firm hold before the warm weather, and thus all future care will be prevented. By sweeping off large spaces at a time, and placing wood pins at the requisite height for straight and sweeping levels, we found that men unused to garden work, and who had never laid a piece of turf, did the work very well.—R. F.

TRADE CATALOGUE RECEIVED.

B. S. Williams, Victoria and Paradise Nurseries, Upper Holloway, London, N.—*General Bulb Catalogue.—Fruit Trees, Roses, &c.*

TO CORRESPONDENTS.

** We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

BOOKS (*W. J. S. Horton*).—"The Garden Manual" will suit you. It can be had free by post from our office if you enclose twenty postage stamps with your address.

BOUQUET MAKING (*Amateur*).—The season will decide in a great measure the kinds of flowers. At present we may say that a white Rose half-expanded forms a capital centre; it should be set in its own leaves. The next or first row may be crimson or scarlet Roses, second row pink Roses, third row deep velvety crimson, fourth row rose-coloured Roses, and the outer margin yellow and white Roses alternately; the whole set in their own leaves. That is not what we think what you want, we therefore give you another arrangement:—Centre *Stephanotis floribunda*, set in *Adiantum* assimile; first row pink *Zonal Pelargonium*, set in *Pheasant's-foot Geranium*, arranged alternately with *Verbena Mauve Queen*; second row *Erica Cavendishii*, set in *Adiantum cuneatum*, alternately with *Verbena venosa*, the *Erica* corresponding to the *Mauve Queen Verbena*, and the *Verbena* to the pink *Pelargonium*; third row white *Verbena* and double *Pelargonium* scarlet, or *Ixora acuminata* and the *Pelargonium*, set in *Myrtus microphylla*; fourth, *Ixora javanica floribunda* and *Pleroma elegans*, set in *Adiantum cuneatum*; fifth, *Allamanda grandiflora* and *Dipladenia splendens*, arranged around the bouquet in quarters as regards the *Allamanda*, with the *Dipladenia* on both sides adjoining, and fill in with *Stephanotis floribunda* or *Eucharis amazonica*, setting all in *Adiantum farleyense*.

VARIOUS (*Idem*).—You may convert a lean-to greenhouse into a stove, the only difference is in providing for more heat; but as you say nothing of the temperature you can command at present, we can only remark that you will need to have double the amount of heating surface as compared with that of a greenhouse. Greenhouse plants with blue flowers are *Pleroma elegans*, *Witsenia corymbosa*, and *Kennedyia inophylla floribunda*. *Clorodendron Balfourii* cannot well be grown in a greenhouse. Six Orchids for greenhouse culture are *Lycaste Skinneri*, *Epidendrum macrochilum*, *Oncidium leucochilum*, *Odontoglossum Alexandre*, *O. grande*, and *Lælia superbiens*.

LILUM NOT HEALTHFUL (*M. L.*).—The leaves you sent exhibit no traces of insect attacks, and appear simply to be owing to the heat to which they have been subjected, a warm greenhouse being too exciting for plants of this kind. The roots may be in soil which is heavy and sour from imperfect drainage.

PACKING FERNS FOR IMPORTATION (*E. L. J.*).—The Ferns should be taken up with a moderate amount of roots and soil, and most of the fronds removed. They should then be thoroughly wetted and placed on a 6-inch layer of damp but not very wet moss in a shallow box, surrounding and covering the roots and ball with 3 or 4 inches deep of the same material, securing them firmly in position with laths, cut so as to fit exactly inside the box on the moss, and nailing them in position. A space of about 3 inches between the moss and lid

of the box will be sufficient, and it may be filled with any kind of dry material, light, of course. The Filmy Ferns may be packed in the same way, using wet moss, and giving the roots and substances adhering to them a thorough soaking in water before placing them in the wet moss. It is well to put about 3 inches of dry moss in the box, then the wet as before described, and a like thickness of dry moss on the top. The tree Ferns should have the fronds cut off to within a foot of their base, and be taken up with about a foot square of roots; the stems as well as the root parts ought to be enveloped in damp moss and secured with string, then place the plants in a packing-case, well surrounding them with dry material, as straw. The best time to send them is when the plants have ceased growing; and the seasons at the Antipodes being the reverse of ours, March or April will be a suitable time. The tubs in which tree Ferns are to be placed should not be tarred inside; the tar would act injuriously on the roots.

LILIUM AURATUM AFTER FLOWERING (*A Subscriber*).—Your plant should be continued in a cold house, or it may be placed out of doors until October, then wintered in a house from which frost is excluded. Keep it moderately supplied with water, and when the stem turns yellow cut it away and repeat, keeping it no more than moist until the shoots are pushing freely, then water in proportion to the growth, avoiding overwatering at any time. We should not remove the offsets unless increase were particularly desired, when you may pot each offset separately. If you do not want more plants, but a good-sized specimen, pot with all the offsets, removing whatever soil may come away freely, clearing it out down to the crown of the bulbs, and cover these with silver sand. If there are few roots, so that soil may be removed to the bulb, in potting surround the bulb with silver sand. Pot with the crown about 3 inches below the rim of the pot, and cover the crown about an inch. The plant will continue to improve both in size and number of blooms for years.

GATHERING AND DRYING EVERLASTINGS AND GRASSES (*K.*).—The proper time to gather Everlasting flowers is when they are full-sized, or a day or two after they are expanded. They may, however, be cut before the flowers open, and we then think them the prettiest, but the larger their size the more durable they are. We gather largely both kinds at noon on a fine day, tie them in small bundles, and hang them up in a dry airy room. They dry well, and do better than when dried out of doors in the sun. The flowers dry best in a house where Peaches or Grapes are ripening. The Grasses should be gathered as soon as they are fully developed, and there is no better plan of drying them than that described for the Everlastings. We like to gather them about a week after flowering.

STRIKING ROSE CUTTINGS (*F.*).—The most successful plan we have ever tried with regard to striking Roses, is to put the cuttings into sandy soil in 6-inch pots, about five or six cuttings to a pot, plunge the pots in a moderate hotbed, shade from direct sun, and give air, especially at night, but always leaving a certain amount of air, so as to prevent damping-off. The cuttings should be kept moist, but not too damp. More depends on the kind of cuttings used than on the treatment. The best cuttings are taken from flowering shoots as soon as the flowers are over, taking the shoots off with a piece of the older wood or heel left on, and taking care that the wood is sound and well ripened. Any soft succulent wood is almost sure to damp off. Rose cuttings are impatient of too much heat, but in order to strike them quickly they should have a moderate bottom heat. After four or five weeks the cuttings will be struck and ready to pot off. Put them into 4-inch pots filled with moderately rich and light soil, containing a good proportion of decayed leaf soil. Plunge the pots for a time in ashes over a moderate hotbed, harden off when the roots are re-established, and keep them in well-ventilated cold frames during the winter.

GRAPE VINES (*True Blue*).—All the varieties you name will thrive together in the same temperatures. The Black Champion is a superior kind of Black Hamburgh. The Alicante is a good black variety, ripens late, and keeps well. The Colens leaves are very inferior.

LEAF OF RED OAK (*A. R.*).—The leaf sent is large, but not much larger than is usual on the variety from which it was taken, *Quercus rubra latifolia*, or Champion Oak.

VINE LEAVES UNHEALTHY (*A. B.*).—An insufficient supply of water at the roots would cause the leaves to assume the appearance of those sent. You could ascertain this by examining the border, as too much water would have a similar effect; it would destroy the rootlets, and thus check the flow of sap. We do not believe it is caused by insufficient ventilation.

TREATMENT OF POTTED VINES (*B. C.*).—As you intend to start them in November, they should have been in their fruiting pots by July, and be kept in a growing temperature until September. If your Vines require repotting we would pot them at once, and if the leaves are still green, place the plants in heat until they assume a yellow tinge. Apples, Pears, and Plums will ripen their wood out of doors. Allow the Peach trees to remain in the orchard house, and give them plenty of room. Fruit-buds will not be freely produced if either the branches or the trees are crowded.

PERFECTING CUCUMBER SEEDS (*A Young Beginner*).—If your Cucumbers are grown in rich soil they will not produce seeds freely—indeed, some of the best exhibition varieties produce seeds but sparingly under any circumstances. Those plants which you intend should produce seeds must be planted in soil without any manure in it. If you have a Cucumber house you could grow a plant or two in pots. Place them in a position fully exposed to the sun and near the glass. You may get seeds in that way, but it is too late in the season now to attempt it.

PEARS CRACKED AND DEFORMED (*L. I. K.*).—The roots of the trees have descended too deep. Open a trench on one side of each, and cut underneath through all the descending roots; drain the soil, and keep the surface mulched throughout the summer to induce the roots to remain near the surface.

ELM BLEEDING (*A Subscriber*).—Apply a red-hot iron to the wound, and when the surface is charred apply carpenter's red knotting.

GALEOPSIS TETRAHIT (*P. D.*).—Your specimen is *Galeopsis Tetrahit*, and it certainly has fifteen ribs in the calyx. Some botanists give five nerves, and others five to ten as the generic character of *Galeopsis*.

CUTTINGS (*J. C. M.*).—You will see advertisements in our columns stating where they can be had. The distinctive markings of Hamburgh fowls are in "Poultry Book for the Many," which you can have free by post from our office if you enclose seven postage stamps with your address.

Kew Gardens (*Fred.*).—Write to Mr. Smith, the curator, and tell him what you wish.

INSECTS (*Nicol*).—The larger beetle is the notorious *Hylobius Abietis*, very destructive to Fir trees; and the smaller one is *Strophosomus Coryli*, hitherto

reputed a harmless species. Are you sure that the latter gets inside the twigs and eats the whole of the pith? If so, would you be so good as to send specimens of twigs so eaten, with the insects, to Professor Westwood, Oxford.—I. O. W.

NAMES OF FRUITS (*Bradney Manor*).—Orangefield Tomato. (*A. Jones*).—Brailbrook Seedling.

NAMES OF PLANTS (*H.*).—*Delphinium pictum*. (*East Sussex*).—We must compliment you on your admirable specimens. 1, *Cattleya Loddigesii*, *Lindl.* (*C. Harrisonii*, *Part.*); 2, *Lantana aculeata*; 3, *L. nivea*; 4, *Eucalyptus* sp.; 5, *Cotula coronopifolia*; 6, *Peperomia*, near *Saundersii* (*Bot. Mag.*, 5634), and *arifolia*; 7, *Impatiens parviflora*; 8, *Epidendrum oncidoides*; 9, *Hartwegia comosa*. (*T. B. W.*).—1, *Indeterminable*; 2, *Celsia Arcturus*. (*C. G.*).—*Asperula ciliaris*. (*H. R. S.*).—1, *Verbascum phoeniceum*; 2, *Celsia Arcturus*; 3, *Russelia juncea*. (*J. P. R.*).—1, *A Spiraea*, perhaps a fragment of *S. Aruncus*; 2, *S. Fortunei*; 3, *Escallonia macrantha*; 4, *Indeterminable*; are leaf and pod from the same plant? (*J. G.*).—We cannot name your *Begonias*, nor any florists' varieties. They are too numerous and difficult to distinguish.

POULTRY, BEE, AND PIGEON CHRONICLE.

PRIZES FOR BANTAMS.

In April and May last it was suggested in our Journal that subscription cups should be offered for each of the above classes at the coming Ipswich Show, when I promised to do what I could to assist so laudable an object, but am sorry a severe illness prevented my then giving much attention thereto. I am happy to announce Mr. R. H. Ashton, Mottram, Manchester, has guaranteed the £3 3s. cup for Blacks, and I trust not only those who promised to subscribe (as per the Journal of May 2nd), but others, will now send their subscriptions to Mr. Ashton, and if more than the 63s. be collected the surplus will be applied in creating a fourth and in increasing the second and third prizes. I am sorry the Brown Red Game and the Whites have not more supporters, but we must hope the success of the Blacks will be such as to warrant not only the Committee of the Ipswich Show, but others also for the future making separate classes for each.—W. B. JEFFRIES, *Secretary*.

COMPARATIVE EXPENSE AND PRODUCE OF VARIOUS FOWLS.

ISAAC LYNDE, of Ohio, in the *Poultry World*, describes an experiment tried by him last season. At the 1st of September he took ten pullets each of five breeds, each within a week of being six months old, and placed them in yards 40 feet square, with comfortable houses. For the next six months he kept an account of their food and egg-production with the following results:—

The Dark Brahmats ate 369½ quarts of corn, oats, and wheat screenings, laid 605 eggs, and weighed 70 lbs.

The Buff Cochins ate 406 quarts, laid 591 eggs, and weighed 73 lbs.

The Grey Dorkings ate 309½ quarts, laid 524 eggs, and weighed 59½ lbs.

The Houdans ate 214½ quarts, laid 783 eggs, and weighed 45½ lbs.

The Leghorns ate 231½ quarts, laid 807 eggs, and weighed 36½ lbs.

All the eggs were sold at 18 cents a-dozen. The Leghorns ate less corn than the Houdans, so their food cost less, and the receipts, deducting cost of food, was largest from them. It would have been interesting to have had the weight of the eggs laid by the hens of each breed. The difference in value of the light and heavy fowls should also be taken into consideration.—(*Canada Farmer*.)

ORMSKIRK AND SOUTHPORT POULTRY SHOW.

THIS Show, held in connection with the Southport and Ormskirk Agricultural Show, was held on the 6th and 7th of August in a well-appointed field adjacent to the railway station of this so-called Montpellier of the north, and was a great success both as regards the quality of the birds and the number of visitors; the latter could be counted by thousands on both days. A better working Committee we do not wish to meet, and they well deserve the support of our principal exhibitors.

In poultry, the Mayor's cup for the best pen in the Show went to a capital pen of Partridge Cochins. In *Dorkings* the Whites do not make that progress we should like, and their coloured brethren were represented by some good old birds, but out of feather; the chickens, however, were most noticed by the Judge. *Cochins* were also a good lot, more especially the prize Partridge Cochins, to which, as before stated, the Mayor's cup went. Of *Brahmas* many birds that have won before were in the prize list. *Spanish* were not in good condition, and not so good as usual for this district. *Hamburghs* were not a large show, but Mr. Beldon took all the first prizes with capital birds. *Game Bantams* were very good.

In Rouen *Ducks* and *Geese* we were agreeably surprised to find that the weights and quality are still on the increase, but we cannot say so much for the Aylesbury Ducks.

Among the *Pigeons* were representatives from some of the best exhibitors, and the competition for several of the cups was very close, though many good birds were passed over, giving evident signs of being overshown. The Pouter cup went to a very grand Blue hen; that for Black Carriers to a good Black cock; and the cup for any other colour to a splendid Blue belonging to Mr. Duckworth, who also took the cup for the best Dun Carrier. Both, if we mistake not, were the winners at the late Birmingham Show. In Carriers of this year's breeding Mr. Buckley was deservedly first with a very good bird. In Dragons Mr. Wakem won the cup with a pair of Blues of the first quality against as good a lot as we have ever seen. He also won both prizes in foreign Owls in a very good class. The cup for Barbs went to Mr. Fulton's Blacks in a not very strong class, and his wife won the cup for the best pen in the remaining classes with a fine pair of Trumpeters. In Fantails, Jacobins, Tumblers, Turbits, &c., as the prize list will show, there were some very good birds, Mr. Horner's Swallows in the Variety class being especially good.

DORKINGS.—*White.*—1 and 2, J. Robinson, Vale House, Garstang. 3, M. Fairhurst, Woodlands, Ormskirk. *Chickens.*—1, J. Watts, King's Heath, Birmingham. 2 and 3, J. Robinson.

DORKINGS.—*Coloured.*—1, E. Leech, Rochdale. 2, J. Stott, Healey, Rochdale. 3, J. Robinson, hc, T. Hornsby, Latham; J. Cople, Eccleston, Prescott. *Chickens.*—1, E. Leech. 2, J. Stott. 3, J. Robinson. hc, J. Cople, Eccleston, Prescott.

COCHIN-CHINA.—*Buff.*—1 and hc, W. A. Taylor, Manchester. 2, A. Bamford, Middleton. 3, H. Lacy, Hebdon Bridge. *Chickens.*—1 and hc, W. A. Taylor. 2 and 3, C. Sidgwick, Ryddesden, Keighley.

PARTRIDGE OR GROUSE.—1 and Cup, C. W. Brierley, Middleton. 2, W. A. Taylor. 3, T. Stretch, Ormskirk. *Chickens.*—1 and 3, C. Sidgwick. 2 and hc, W. A. Taylor.

BRAHMA POOTRA.—1 and 2, H. Lacy. 3, T. F. Andsell, Cowley Mount, St. Helens. hc, E. Leech. *Chickens.*—1, T. Andsell. 2, W. A. Taylor. 3, J. H. Pickles, Birkdale. hc, T. H. Dean, Warder, Hereford; C. Morris, Grassendale; W. Gamon, Chester; H. Lacy; E. Smith.

SPANISH.—1, J. Leeming, Broughton. 2, H. Beldon. 3, H. Wilkinson, Earby, Skipton. hc, J. Carlisle, Earby, Skipton. *Chickens.*—1, H. Wilkinson. 2, J. Carlisle.

GAME.—1, C. W. Brierley. 2, J. Wood, Wigan. 3, T. P. Lyon, Liverpool. *Chickens.*—1 and 3, J. Carlisle. 2, J. Wood.

HAMBURGS.—*Golden-spangled.*—1, H. Beldon. 2, J. Robinson. *Silver-spangled.*—1, H. Beldon. 2, J. Robinson.

HAMBURGS.—*Golden-pencilled.*—1, H. Beldon. 2, W. Speakman, Doddington. 3, J. Robinson. *Silver-pencilled.*—1, H. Beldon. 2, J. Robinson.

BANTAMS.—1, W. F. Addie, Fulwood. 2, T. Sharples, Rawtenstall. 3, R. H. Ashton, Mottram.

GAME.—*Cock.*—1, C. W. Brierley. 2, J. Wood, Wigan. 3, G. F. Ward, Wrenbury, Cheshire.

GAME BANTAM.—*Cock.*—1 and 2, T. Sharples. 3, G. Maples, Wavertree, Liverpool.

ANY OTHER VARIETY.—1 and 2, H. Beldon. 3, W. H. Crabtree, Levenshulme (Cheshire).

DUCKS.—*Aylesbury.*—1 and 2, E. Leech. *Rouen.*—1, R. Gladstone, jun., Court Hey, West Derby. 2, T. Wakefield, Golbourne, Newton-le-Willows. 3, E. Leech, hc, T. Hornsby, Latham; R. Gladstone, jun.; J. Kenwright, Tarbock.

GESE.—1, E. Leech. 2, T. Harrison, jun., Gateacre. 3, J. Bryers, Ormskirk.

GOSLINGS.—1, E. Leech. 2, J. Bryers. 3, T. Harrison.

TURKEYS.—1, E. Leech.

PIGEONS.

POUTERS.—*Cock.*—1 and hc, R. Fulton, Deptford. 2, E. Horner, Harewood, Leeds. c, R. Fulton; E. Horner. *Hen.*—Cup and c, R. Fulton. 2, E. Horner, hc, R. Fulton; E. Horner.

CARRIERS (Black).—*Cock.*—1, R. Fulton. 2, J. O. Wakem, Town Green, Ormskirk. hc, J. B. Buckley, Southport; E. Horner. c, J. O. Wakem. R. Fulton.

Hen.—1, R. Fulton. 2, J. B. Buckley. hc, J. Stanley, Salford, Blackburn; J. B. Buckley; E. Horner.

CARRIERS (Blue or Silver).—*Cock.*—1, Cup, and 2, C. E. Duckworth, Wavertree. *Hen.*—1 and 2, C. E. Duckworth. hc, E. C. Stretch, Ormskirk.

CARRIERS (Dun).—*Cock.*—Cup, C. E. Duckworth. 2, E. Horner, hc, H. Yardley, Birmingham; J. Stanley; E. C. Stretch. *Hen.*—1 and 2, E. Horner.

CARRIERS (Young).—1 and hc (2), J. B. Buckley. 2, E. Horner.

BARBS.—Cup, R. Fulton. 2, H. Yardley. c, A. Justice, Salford.

JACOBS.—1, E. Horner. 2, R. Fulton. hc, E. Fulton (2); E. Horner.

TUMBLERS.—1, 2, and hc, R. Fulton. c, J. W. Woodhouse, Lynn (2); E. Horner.

DRAGONS (Blue).—Cup, J. O. Wakem. 2, W. Hill, Stockport. hc, F. Graham, Birkenhead; H. Yardley; W. Gamon, Chester.

DRAGONS (Any other colour).—1 and 2, F. Graham. hc, F. Graham; J. Stanley; R. Fulton.

OWLS (English).—1, A. Ashton, Middleton. 2, J. Kemp, Haslingden.

OWLS (Foreign).—1 and 2, J. O. Wakem. hc, C. Dennison, Halifax; J. Stanley; E. Horner.

TURBITS.—1 and 2, R. Fulton.

FANTAILS.—1, T. Rule, Durham. 2, J. F. Loversidge, Newark. hc, J. Kemp; J. F. Loversidge; T. Rule; E. Horner. c, J. Walker, Newark.

SELLING CLASS.—1, H. Adams, Beverley. 2, F. Graham. hc, R. G. Teebay, Burscough, Ormskirk.

ANY OTHER VARIETY.—1, E. Horner. 2, H. Yardley, hc, J. O. Wakem.

ANTWERPS.—1, J. Stanley. 2, J. W. Collinson, Halifax. hc, H. Yardley; W. Gamon.

NUNS.—1, J. B. Bowden, Blackburn. 2, E. Horner.

TRUMPETERS.—Cup and 2, Mrs. Fulton. c, T. Rule.

JUDGES.—*Poultry:* Mr. Teebay, Fulwood, Preston; *Pigeons:* Mr. Hedley, Redhill, Surrey.

COCK-CROW IN AUSTRALIA.—The following extract from Mr. Millett's "Australian Parsonage" may interest your readers. "The cocks crowed vociferously precisely one hour before midnight, and again at two in the morning; on the last occasion without any reference to dawn in the sky, for the sun did not rise till nearly five o'clock upon the longest day. This peculiarity of the domestic fowl is mentioned in most descriptions of Australia, but in none that I have ever read has any notice been taken of the extreme regularity with which the crowing occurs at certain fixed hours." Perhaps some of your correspondents

can tell us at what hours precisely the cocks this side of the world are accustomed to crow.—E. BARTRUM, *Berkhamstead Herts.*

POULTRY AT THE ROYAL AGRICULTURAL SOCIETY OF IRELAND'S SHOW.

The following awards were made at this Show, held at Belfast on the 7th, 8th, and 9th inst:—

DORKING.—*Silver-Grey.*—1, W. Charley, J.P. Seymour Hill, Dunmurry. *Chickens.*—1 and 2, G. Martin, Glenview, Castlereagh.

SPANISH.—1, J. Pollock, Dundonald. 2, W. G. Mulligan, Springfield, Belfast. hc, W. J. Davison, Belmont, Belfast. *Chickens.*—1 and hc, W. G. Mulligan. 2, J. Pollock.

GAME.—*Black-breasted Red.*—1, J. Meike, Stranraer. 2, Miss C. Chichester, Rumbold, Roscommon.

COCHIN-CHINA.—*Buff.*—1, W. G. Mulligan. 2, F. H. Green, Windsor, Belfast. c, Miss C. Chichester; R. Long, Belfast. *Brown or Partridge-coloured.*—1, F. H. Green. 2, R. Long. *Chickens.*—1 and 2, F. H. Green. *Black or White.*—1 and 2, Miss C. Chichester (White).

BRAHMA POOTRA.—*Dark.*—1, W. G. Mulligan. 2, F. H. Green. c, W. Mullan. *Chickens.*—2, W. Gregg, Belfast. *Light.*—1, R. Long.

CRÈVE-CŒUR.—1, Miss C. Chichester.

WHITE-CRESTED BLACK FOWL.—1, W. G. Mulligan.

HAMBURGS.—*Golden or Silver-pencilled.*—1, E. R. Lucas, Belfast (Golden-pencilled). *Golden or Silver-spangled.*—1, 2, and c, W. J. Davison.

GAME BANTAMS.—1, W. J. Mulligan (Black Red).

DUCKS.—*Rouen.*—1 and 2, W. J. Mulligan. hc, Miss C. Chichester. *White Aylesbury.*—1, W. Charley. 2 and hc, W. G. Mulligan.

GESE.—*Grey and Mottled.*—1, W. Mullan, Willowfield, Belfast.

COCHINS.—1, Miss C. Chichester (Cambridge). *Poult.*—1, W. Mullan.

ORNAMENTAL WATERFOWL.—1, Miss C. Chichester (East Indian Ducks).

COTTAGE'S PRIZES.—1, W. Gibson, Carnamock, Castlereagh (Silver Dorkings). 2, W. Magrath, Ble-ton (Silver-Grey Dorkings). *Ducks.*—1, W. Magrath (Aylesbury). 2, W. Gibson (Rouen). c, W. Magrath (Aylesbury); W. Gibson (Rouen).

PIGEONS.—*Pouters.*—1, J. Frame, Comber. 2, J. Waters, Belfast. *vhc.* T. M'Quiston, Belfast. hc, J. Waters; T. M'Quiston. *Carriers.*—1, J. Frame. 2, J. M'Calpin. *Tumblers.*—1 and 2, J. Frame. *Fantails.*—1 and 2, J. Frame. *Nuns.*—1, T. M'Quiston.

JUDGE.—Mr. E. Hutton, Pudsey, Leeds.

ALLERTON POULTRY SHOW.

AMONG the multiplicity of shows now being held in Yorkshire and Lancashire, few take a better position than the annual Show at Allerton. The Committee are practically conversant with all that is necessary to insure a good Show, and to a man are determined to deserve success. In this year's Show the poultry were placed so as to form a large square, and the Pigeons and Rabbits occupied a double row down the centre. The general appearance was therefore very good.

In adult *Game* fowls, condition, as must at this season be expected, was wanting, and in some cases very much so; the hens were mostly in tolerable feather, but the cocks, excepting the Brown Reds, were really very much out of plumage. A pair of Red Piles, winners of the first prize in the class for Any other variety of *Game* fowls, were in capital order for the show-pen. *Spanish* were few, and as the day proved showery, they did not show to advantage. The *Cochins* were not so good as they might have been, if the prize birds are excepted, and we regretted much to find so many with diseased feet. *Brahmas* were good, but their numbers were very limited. Only a single pen was entered in the class for *French* breeds; these were *Crève-Cœurs*, and were an admirable pen. In *Hamburgs* all varieties were shown in perfection, Mr. Beldon's best birds taking their usual place at the head of most of these classes. Those classes devoted to young *Hamburgs* were better than we can recollect for some years past. It may be noticed that this district stands unrivalled for its *Hamburgs* of all kinds, and the competition of every breed was unprecedentedly good. *Polands* were excellent, but few. In the Any other variety class *Dorkings* were the only breed shown, consequently were the only prizetakers. Black Red *Game Bantams* were good, as were also the Black and one pair of White ones, but no other superior pen of any breed was in the lists. The young *Game* classes were excellent, but scarcely, as a rule, advanced enough for the show-pen. They were, however, classes of large numbers, and contained superior specimens almost without an exception. Capital *Partridge* and *Buff Cochins* were shown, and some high-class *Game Bantam* chickens.

Both Aylesbury and Rouen *Ducks* were shown better than at most late meetings, and in the Variety Duck class were evidently the pick pairs in the kingdom. They were the principal attraction on the whole Show ground, and the three prizes were awarded to grand-plumaged pens in the following order:—Whistling Ducks, Bahamas, and Kasarka Ducks; a large number of other deserving birds had in so great a variety to be contented with high commendations. The attendance quite equalled the expectations of the most sanguine, and all the visitors appeared highly gratified with the treat before them.

PIGEONS.—*Pouters*—a pair of Whites stood first, and Blues second and third, the second-prize pair being rather longer in feather and limb, but not in the same condition, which may perhaps be accounted for when it is considered that the cock

bird (which is 19 inches in feather and 7 inches in limb) is a bird of this season. There were but two pairs of Carriers. In Short-faced Tumblers Almonds stood first and second, and Red Whole-feathers third, the Almonds being models of their kind. It is seldom there is such a display of common Tumblers at any Show, the prizetakers winning solely by condition and bloom, and every pen deserved a prize. The first were Red Mottles, the second Black Baldpates, and the third Black Mottles, while Silver Balts and Red Mottles were highly commended. The first-prize pair of English Owls were Silvers, and the second and third Blues; and this being the first year the class was admitted into the schedule, we were glad to see so many entries. Foreign Owls were also very good, and the competition very keen, Blue winning first, and Whites second and third. Turbits were not so large a class as we have seen at this Show, but to improve upon the prizewinners would be hopeless. The first and third were Reds, and the second Yellow. Jacobins, with the exception of the first-prize pair, were rather coarse, though good in other points. Fantails were good though not numerous, but Barbs were poor. In Dragons the winners were Blue, the first-prize pair being in all points as good as can be desired. There was also a very good pair of Reds. Short-faced Antwerps were a large class, but many of the birds were neither long nor short, though extremely good in all points as common Antwerps. The first prize went to Silver Duns, the second to Blues, and the third also to Duns. In Long-faced the entries were also large, but several pairs were not well matched. The first prize went to a handsome pair of Red Chequers, the second to Duns (which pair was superior in every point to all the rest, except that the hen was a little spindly in bill), and the third to Duns, not in the highest condition. Reds were first in Magpies, Blacks second, and Blues third. Archangels were a good class, and the birds in good bloom. In the Variety class were also some handsome birds of the fancy varieties, and in the Selling class Blue English Owls were first, White Dragons second, and Red Pouters third.

GAME.—Black-breasted.—Cock.—1, W. Spencer, Haworth. 2, J. Mason, Worcester. 3, W. Speakman, Nantwich. **Hen.**—1, W. Spencer. 2, H. Jennings, Allerton. 3, Miss Ackroyd, Eccleshill.

Brown-breasted.—Cock.—1, Miss Ackroyd. 2, J. Fortune, Keighley. 3, C. W. Brierley, Middleton. **Hen.**—1, T. Dyson, Halifax. 2, J. Carlisle, Earby, Skipton. 3, W. Spencer. **hc.** J. Smith, Allerton; C. W. Brierley. **c.** M. Jowett, Clayton.

GAME.—Any other Variety.—1, C. W. Brierley. 2, Miss Ackroyd. 3, E. Winwood, Worcester.

SPANISH.—Black.—1, J. Powell, Bradford. 2, H. Beldon, Goitstock, Bingley. 3, J. Thresh, Bradford.

COCHIN-CHINA.—1, A. Bamford, Manchester. 2, C. W. Brierley. 3, W. Harvey, Sheffield. **hc.** C. Sidgwick, Keighley; H. Beldon; W. Mitchell, Birkenshaw.

BRABMA-FOOTRA.—1, W. Whitley, Sheffield. 2, W. Harvey. 3, E. Leach, Rochdale.

FRENCH.—1, H. Beldon.

HAMBURGS.—Golden-spangled.—1 and 3, H. Beldon. 2, J. Rollinson, Lindley, Otley. **hc.** C. Holstead, Fearncliffe, Bingley. **Silver-spangled.**—1, Cup, and 2, H. Beldon.

HAMBURGS.—Golden-pencilled.—1 and 3, H. Beldon. 2, J. Preston, Allerton. **Silver-pencilled.**—1 and 2, H. Beldon. 3, H. Pickles, Skipton. **c.** H. & A. Gill, Crawshawthorpe, Hawtinsall.

HAMBURGS.—Black.—1, H. Beldon. 2, J. Smith, Gilstead, Bingley. 3, J. Moore, Bingley. **c.** C. Sidgwick; J. Sharp, Bingley.

POLAND.—1, 2, and 3, H. Beldon.

ANY OTHER VARIETY.—1, E. Leach. 2, E. Smith, Passmarrs, Rochdale. 3, W. Harvey.

GAME BANTAMS.—1 and 2, W. F. Entwistle, Westfield, Bradford. 3, G. Noble, Dewsbury. **hc.** W. Harvey. **c.** W. Adams, Ipswich.

BANTAMS.—Any other Variety.—1 and Teapot, H. Beldon. 2, R. H. Ashton, Mottram, Manchester. 3, W. Harvey. **hc.** J. Waddington, Guiseley, Leeds.

CHICKENS.

GAME.—Black-breasted.—Cockerel.—1, W. Spencer. 2, Barker & Charnock, Ilkington, Halifax. 3, W. Fell, Adwalton. **hc.** J. Hird, Fearncliffe, Bingley; H. Jennings. **Pullet.**—1, M. Jowett. 2, Wilson & Hodgson, Ilkington. 3, E. Winwood, Worcester. **hc.** J. Hird.

GAME.—Brown-breasted.—Cockerel.—1 and 2, W. Tillotson, Cotes Barnoldswick. 3, J. Spencer, Clayton. **hc.** A. Kershaw, Clayton; J. Smith. **c.** T. Dyson; J. Spencer; J. Carlisle. **Pullet.**—1 and 3, W. Tillotson. 2, J. Smith. **hc.** J. Carlisle.

GAME.—Any other Variety.—1, Miss Ackroyd. 2, R. Walker, Gomersal. 3, T. Dyson. **hc.** Wilson & Hodgson; M. Jowett.

COCHIN-CHINA.—1 and 2, C. Sidgwick.

HAMBURGS.—Golden-spangled.—1, H. Beldon. 2, J. Preston, Allerton. 3, Duke of Sutherland, Trentham Hall, Stoke-on-Trent. **Silver-spangled.**—1, H. Beldon. 2, T. Fawcett, Baildon, Leeds.

HAMBURGS.—Golden-pencilled.—1, H. & A. Gill. 2, E. Clayton, Keighley. 3, H. Pickles. **hc.** W. Driver, Keighley; J. Thornton, Keighley; W. Clayton; J. Smith. **c.** H. Beldon. **Silver-pencilled.**—1, H. Beldon. 2, H. Pickles. 3, H. Smith. **hc.** H. Smith; J. Preston; Duke of Sutherland.

HAMBURGS.—Black.—1 and 2, C. Sidgwick. 3, J. Smith. **hc.** J. Moore; Duke of Sutherland.

GAME BANTAMS.—1, 2, and 3, W. F. Entwistle, Bradford. **c.** W. Shenstone, Worcester; G. Noble.

BANTAMS.—Any other Variety.—1, R. Pickles. 2, W. H. Robinson, Keighley. 3, R. H. Ashton.

SELLING CLASS.—1, J. Powell. 2, A. Kershaw. 3, C. Carr, Bingley.

DUCKS.—Rouen.—1 and 2, J. Newton, Silsden. 3, E. Leach. **Aylesbury.**—1 and 3, E. Leach. 2, J. Hedge, Aylesbury. **hc.** H. Beldon. **Any other Variety.**—1, H. B. Smith, Broughton, Preston. 2 and 3, W. Binns, Pudsey, Leeds. **hc.** H. B. Smith; C. W. Brierley; W. Binns; J. J. Malden, Biggleswade.

PIGEONS.

POUTERS.—1, 3, and **hc.** J. Hawley, Gillington. 2, W. Harvey, Sheffield.

CARRIERS.—1, H. Yardley, Birmingham. 2, J. Hawley.

TUMBLERS.—Short-faced.—1, 3, and **hc.** J. Hawley. 2, W. Harvey. **Common.**—1 and 2, J. Hawley. 3, D. Riddihough, jun., Bradford. **hc.** W. Harvey; D. Riddihough, jun. (2).

OWLS.—English.—1, A. Wadsworth, Ovenden. 2, W. Harvey. 3, J. Hawley. **hc.** W. F. Entwistle; J. Hawley; J. Thresh, Bradford. **Foreign.**—1 and 3, J. Hawley. 2, C. Dennison, Halifax. **hc.** J. E. Mason, Bradford. **c.** H. Yardley.

TURBITS.—1, Clayton & Bairstow, Bradford. 2 and 3, J. Hawley. 4, T. Foster, Bingley. **hc.** W. Binns.

JACOBS.—1, W. Binns. 2, Hinchcliffe & Holt, Bradford. 3, J. Hawley. **hc.** J. Lister, Keighley; J. Hawley.

FANTAILS.—1 and 2, J. F. Loversidge, Newark. 3 and **c.** J. Hawley. **hc.** H. Yardley.

BARBS.—1, H. Yardley. 2, R. Wade, Halifax. 3, J. Hawley.

DRAGONS.—1, H. Yardley. 2, J. Hawley. 3, W. Harvey. **hc.** W. Stanhope; Clayton & Bairstow.

TRUMPETERS.—1, 2, and 3, J. Hawley.

NUNS.—1, J. Hawley.

ANTWERPS.—Short-faced.—1, J. Lister. 2, D. Riddihough, jun. 3, H. Yardley. **hc.** J. Lister; Whittingham & Bishop, Skipton; F. Darnford, Leeds. **Long-faced.**—1, D. Riddihough, jun. 2, H. Jennings. 3, J. W. Collinson, Halifax. **hc.** J. Lister (2); Clayton & Bairstow (2); H. Jennings; J. W. Collinson.

MAGPIES.—1 and 2, J. Hawley. 3, H. A. Saddington, Northampton. **hc.** H. Yardley.

ARCHANGELS.—1, H. Yardley. 2, W. Harvey. 3, W. Binns. **hc.** H. Yardley; J. Hawley.

ANY OTHER VARIETY.—1, J. Hawley. 2, D. Riddihough, jun. 3, H. Yardley.

SELLING CLASS.—1, W. Stanhope. 2 and 3, J. Hawley. **hc.** J. Lister; Clayton & Bairstow (2); L. Watkin, Northampton; J. Hawley.

RABBITS.—Common.—1, J. Knight, Allerton. 2, E. A. Fairbank, Allerton. 3, E. R. Waddington, Gillington. **hc.** T. Roper, Allerton.

The poultry were judged by Mr. E. Hewitt, of Sparkbrook, near Birmingham, and the Pigeons by Mr. E. Hutton, of Pudsey, Leeds.

TUMBLERS NOT TUMBLING.

"SCOTCH THISTLE" notices with regret the fact that by far the greater majority of Tumblers do not tumble. Is this a modern grievance? I incline to think that at any rate it is an increasing grievance. In respect to its being a modern trouble there is this to be said, that none of the old writers allude to it; they all speak of the birds as if their tumbling were taken for granted, this being always the case with regard to flying Tumblers; and they even go so far as to say the Almond could perform as well, being clearly desirous of removing a supposed stigma from the Almond. According, therefore, to those old writers, all Tumblers tumbled. Even the author of "The Dove-coat" speaks with rapture about "that darling little cinnamon Tumbler" and "the seven times he went over;" whereas those said darlings may be bought in dozens, and not one tumble at all, or only tumble badly. Eaton is, I think, the first writer who notices the scarcity of the proper aerial performances of the Tumbler, saying, "How often you observe a flight of Tumblers, say twenty or more, but how seldom, or how few tumble at all! You may observe one or two. I cannot think what has come to the Tumblers as regards tumbling." And then he speaks of their being so different when he was a boy, and how delighted he used to be with their tumbling. I can look back some thirty years and a little more, and remember being invited when a boy to see this fancier's flight and that, and among poorer men this or that red or black bird's performances.

This year I have been experimenting in flying Tumblers, and have an arrangement with the keeper of a bird shop to send me any good-looking Tumblers, to be returned by me if not good performers—and every bird has as yet been returned, or will be, they not tumbling, or only backing, or not tumbling well. No bird is to be sent to me unless it be pearl-eyed, and properly marked, and made according to the variety. Sometimes I have had a pair sent with these words, "The person I bought them of said they tumbled, and I rather think they will, as they have a few feathers on their legs." For once I overlooked the feathers, as they were very few, but in spite of them they did not tumble, and I returned them last week.

Then we have in this world a rule that money will bring anything; so I advertised in this Journal for three hen Baldpates (my particular favourites, because of the pleasing contrast of colour when in the air): the birds were to be good performers. Well, I had not one answer from any single individual who could warrant that his birds were actually and really tumblers. I had indeed plenty of answers and offers of Baldheads from 2s. each to 20s., and one man said his bird looked as if it would tumble! The general reply and inducement to purchase was, that the birds were not flown, and therefore no opinion as to their performances could be given. In the end I had to be satisfied with properly marked and coloured birds. This experiment and its failure are, to say the least, singular, and it seems impossible to answer the question, Why do not modern Tumblers tumble? Clearly this variety received its name because of its performances in the air; and the account given by the oldest writers of the shape of the bird, its eyes, markings, &c., show that our present breeds resemble exactly those known a century since as Tumbler and tumbling Pigeons.

The Short-faces have all greatly improved. The Almond of seventy years since was not much to boast of: this we all know by the engravings of the birds of that date. There may be found one reason for the deterioration of Tumblers (fulfilling their name) in the fact that shows have so much increased the breeding of Short-faces, and in many strains of flying birds traces of Short-face blood are to be seen. As these always tumbled less than the flying birds, an infusion of their blood has injured the flyers in the air, though improved their appearance on the ground.

Being conscious that a great many people who have not time to attend to the higher classes of fancy Pigeons, and have not any inclination for the homing birds, yet greatly enjoy a flight of performing Tumblers, which give no more trouble than common Pigeons and add a pleasant feature to the home round which they circle—it would, considering these things, be a useful and, I believe, profitable thing for fanciers to cultivate the flying and tumbling birds; and it would be a comfort to be able to purchase birds which were as true to their name of Tumblers as apparently they were a century ago. This perhaps would best be done by an infusion of Scotch House Tumbler blood; this would be better than too much of the Roller strain, as the House Tumblers, such as I have seen, are better shaped, smaller, and without the objectionable feathers on the legs, which wholly destroy, if long and large, the dapper shape of the Tumbler. Another point would be to cultivate white wings, as they twinkle in the sunshine, and altogether give the birds a pleasanter appearance in the air. A dark-winged bird looks like a jackdaw; even one in a flight, to my mind, mars the appearance of the whole flight. Lastly, I would say that the Pigeon fancy wants to move on in the direction I have indicated.—WILTSHIRE RECTOR.

APIARIAN NOTES.

SINCE I last wrote we have had a fortnight of very remarkable weather, but quite in harmony with the previous weather characteristics of the year. One fine hot week following Sunday the 14th has saved my apiary and given me some 50 lbs. of honey in supers. There would have been more but for the continued determination on the part of my bees to swarm. The last of the season issued on the 28th July, a monster swarm; but during my frequent absences from home I feel sure I have lost many swarms this year. Virgin swarms, too, have been common. Of such I have had at least two. A fine one out of an Italian stock was discovered to-day in an old pollard; and a swarm of the middle of June is now piping in my bee house (August 5th).

The mention of piping recalls an occurrence which proves that this note proceeds undoubtedly from liberated queens—I do not say in every case. We started for a three-weeks holiday in Cornwall on the 15th of July, taking with us an Italian swarm of no great size, which had issued on the Friday previous. It was a second swarm, and had been re-hived on the Saturday into a small box containing several combs of last year's construction. My boys had a fancy to try the effect of a sojourn among heather on a colony of bees, which certainly could not have collected honey enough to maintain themselves at home. They travelled beautifully by rail and omnibus some 150 miles, and after an incarceration of about fifteen hours were liberated at Kynance Cove at about 1.30 p.m. on the 16th. It was during the journey in the train that we distinctly heard the young queen piping. Only once before had I reason to believe this an actual fact from personal observation; this was when I was watching a young queen which was perambulating the combs just after the issue of a second swarm. I saw her suddenly stop on the edge of a comb and fan her wings for a few seconds, and simultaneously I heard the sound of piping close to my ear. Both the fanning of her wings and the piping ceased instantaneously as she rushed off with the same hurried movement as before.

But what of our travelled bees? They were a source of much interest to us from first to last, although their end was sadly tragic. Your readers must know that Kynance Cove, within two miles of the Lizard, is one of the most romantic spots in the south of England. It is surrounded on the land side by high downs of table land enamelled with wild flowers of every description, including several varieties of heather, one or two peculiar to the Lizard district. Not five minutes had elapsed after the liberation of the bees before we discovered them hard at work chiefly on the wild thyme, of which there is a vast quantity for miles around. Being very pure-bred Italians there was no mistaking our little friends. Gradually they extended their flight up the gorge which terminates in the cove, and over the brows of the surrounding hills, and before evening had become quite at home as if they had been born and bred there. Strange to say, however, we very rarely saw any of them after the first day or two in any of our rambles, but we had evident proofs of their activity and the success of their foragings, in the rapidity with which they filled their box and also a small super, which they completely filled with comb and partially sealed up with honey by the eighteenth day, when we prepared for our journey home. Including box and contents of the super, they had gained about 15 lbs. in weight.

The question now was whether to plunder the hive of its honey and leave the bees behind us to recover themselves, as they doubtless would before autumn, or to attempt their return home. The purity of their Italian blood decided us to try the latter course, although with many misgivings; for it is an easy thing to transport bees in autumn or in spring when the combs are tough and breeding has ceased or hardly begun, but far otherwise in the heat of summer under different circumstances.

However, we got them quite safely over three-fourths of the journey; but as we approached home the weather became oppressively hot, and I became aware that the poor bees were suffering greatly from a peculiar hissing sound that issued from the openings. At last a stream of honey was seen issuing from below, which told its tale of disaster. About half a pint of honey was thus lost; but what troubled us most was the loss of our little favourites, whom we found for the most part drowned in their own sweets. As it was Saturday evening when we got home, there was no help for it but to drown them all in water.

The lesson of this story is manifest—namely, that bees will travel well even in summer, provided they are not overloaded with brood and honeycomb. The packing of a wooden box hive is very simple. A few screws at bottom, securing the box to its board, and a thorough ventilation by means of the entrance way and one or more holes at the top, covered over in each case with a piece of perforated zinc, the whole tightly corded—this is all the care required, beyond some personal attention on the journey to see that they are within reach of air, and are not unnecessarily knocked about. Straw hives are not so easily transported, but require some management. In this case we would have the hive, board and all, tied up in a sack, taking care to leave a large hole free in the bottom board as well as in the top, only covered over with perforated zinc carefully nailed to both top and bottom boards. The common skep might perhaps dispense with any hole at top, but we cannot speak here from experience. In this case we should have two large holes covered with zinc in the bottom board.

I will only add, for the information of any persons who are looking out for a summer or autumn place of retreat, that Kynance Cove is very accessible by rail as far as Penryn, and thence by omnibus to Helstone and the Lizard. Very clean though humble lodgings and good attendance, with all the necessities and even luxuries of life, can be had at Mrs. Jane Oliver's. Both trout and sea-water fishing are to be had within easy reach, but not at the Cove itself. The scenery of the coast is fine beyond description. Very fine ladies and exquisites would probably soon spoil their complexions, their gloves, and their tempers there. For health, commend me to the air of this part of Cornwall, which is moderately bracing and by no means relaxing.—B. & W.

SUPERING.

I HAVE been a bee-keeper in a small way, and at intervals, for nearly thirty years. I have now five hives standing in a row, three on separate stands, and two on the same board, and all somewhat close together, as my space is very confined. It is of these last two I am about to write. One, A, is a hive of three years' standing; the other, B, is a decidedly large swarm which came off from one of the other three at the end of May. Some weeks ago I took from A a small glass super holding 6 lbs. of honey, and put in its place the only available thing I had for the moment at hand—an earthenware jar, in fact a leech jar. A few days ago I took this away as it was full, containing about 5 lbs.; and having in the meantime procured new glasses, I put one on again. The swarm B, having rapidly filled their hive and hanging out in large clusters, evidently required more room. As the hive was of the common shape, with a round top, I proceeded to cut out from the centre, with a sharp carving knife, a piece about 3 inches in diameter, and put on a small glass super, placing over this, to exclude the light, a straw hive. On examining them a few days afterwards I found that while the bees were busily working in the glass, many of them had escaped from under it, as it did not fit closely on the uneven top, and they were beginning to work in the straw cover. Taking this off and inverting it, I placed a small glass with a small piece of comb in it over the cluster of bees, and they went up into it very readily; first covering it with thick paper to exclude the light, I placed it on the board as close to the hive as I could.

As, in spite of my endeavours to prevent it, the bees still persisted in working in the straw cover, they were at the same moment at work in three different places, and you will presently find that they did so in a fourth.

On the same day that I took the jar from A I took this outer glass from B filled with honey. Until I read "Bee-keeping for the Many" I had always placed such glasses on the top of a box under an adjoining shed, lifting up one edge sufficiently to allow the bees to escape; this, your book says, they will do in ten or fifteen minutes. I have never yet found this to be the case; on the contrary, for the most part they take a longer time than this to apparently realise their separation from the hive, and to prepare to return to it; and not until evening do I find the glass anything like empty, and even then some few bees linger behind, and have to be displaced with a feather. In this case I adopted the recommendation in your book, and placed the jar and glass each on three inverted garden pots, and left them as usual for some hours, hoping then to find all going on well. But alas! What did I find? Both fuller of bees than ever, and all but empty of honey. Barely 1 lb. was left, when I

ought to have had 10 or 11 at least; the rest had been robbed, and this was not the first time I had suffered in this way; from a glass containing 16 lbs. of honey I had but one-third; but as I deemed this to be an exceptional case I did not profit by the warning. I shall therefore for the future adopt my own plan.

The foregoing statements are merely preliminary, possibly explanatory, of what I am now about to relate. The day following I was watching these two hives A and B, and much to my surprise saw a continuous stream of bees orderly and quietly passing from hive A to hive B, where they were apparently welcomed, as no opposition was made or tumult excited, both of which I have found to be common when the bees of one hive visit another. Again, a few days after this curious scene, finding the bees of B still hanging out idle, I gave them afresh the glass they had assisted in robbing, placing it on the other side of their hive, and between the two. To prevent as much as I could the bees of A going into it, I put a thin board so as to intercept them; they, however, quickly evaded this by passing along the front edge of the board on which they stand, and entering the glass worked amicably with the bees of B. For some reason only one of my hives threw off a swarm this season, and a cast followed in due time.

Many agricultural labourers and small artisans around me keep bees, and, not knowing better, resort usually to killing the bees for the honey. I have been long looking out for a treatise on the subject suitable to their wants, but as yet have found none: all, yours included, are far too scientific for them readily to understand. Can you help me in this matter?—T. P. F.

CHEPSTOW POULTRY SHOW.—We recommend any poultry fancier who either is in the neighbourhood, or hesitating whither to journey for a holiday, to decide in favour of Chepstow; it is well worthy of a visit for its other attractions.

OUR LETTER BOX.

SATIRE ON COCHIN-CHINAS.—"L. W." wishes to be informed when and where the parody appeared, beginning, he thinks,

"At Hong Kong when the moon was low,
(Second line forgotten)
A giant Shanghai's awful crow
Awoke the deep solemnity."

HENS DYING (G. H.).—The fowl we received died of atrophy; in every way the bird was out of condition. We cannot guess at the cause, but where two fowls in the same yard are in as bad condition as these, the others cannot be well. If you wish to know more, you must send description of food, run, and lodging.

AGE OF GAME COCKS FOR DUBBING (H. R.).—As soon as they are hard-feathered. They must not be dubbed while they have any stub feathers. From four to five months old is, in our opinion, the best time.

CONSEQUENCES OF CROSS-BREEDING (Frenchman).—We can answer your question by giving you our experience; it is that such crosses have always caused us loss and trouble. We do not wonder at it. Some breeds are best for laying; some for sitting. To mix the two is to destroy the quality for which the breed is famous by engraving on it that which is antagonistic to its nature. We believe you will not succeed in getting good sitters from any crosses with Houdan or Spanish. Nature did not intend them to sit, and they cannot contribute a quality they do not possess.

GAME CHICKENS OVER-STIMULATED (An Old Subscriber).—You have probably done too much by half for your chickens. Your feeding is bad. Discourage the hempseed and the wheat; both will help to cause the symptoms you complain of. If you had stated the ages of the chickens we could have spoken more positively. They are chickens from the time of being hatched till they are nine months old, but the young want more attention than the older. They do not want the stimulants now they require in cold weather, and when the nights are long. Boiled egg, curd, bread and milk, and crushed corn are food for young, ground oats and barley for older birds.

PIGEON RACE (H. J. R. L.).—You will find particulars in the sporting newspapers.

PIGEON TRAP (V. L.).—We do not know the trap you refer to. There is a description of one on page 85 of "The Pigeon Book," which book you can have by post free from our office if you enclose twenty postage stamps with your address.

MEAD (S. W.).—There are various kinds of mead manufactured. We copy two recipes:—To a gallon of water put 2 lbs. of honey and 1 lb. of sugar; boil for an hour, put in the whites of four eggs to raise the scum, and skim it quite clear whilst boiling; then put it into a clean tub, and let it stand for a week, putting in a toast with honey to make it work; then turn it, put in the peels of three or four lemons, let it stand for a month, and then if it is not sufficiently fine put in more honey, and let it stand longer. Frontignac Mead.—Take 50 lbs. of honey, 50 lbs. of fine raisins, and 50 gallons of water; boil about fifteen minutes, keeping it well skimmed; put it in a tub to work, and add to it a pint of ale yeast, letting it work until the yeast begins to fall. When taken clear off turn it with the raisins. Let it continue in the cask for twelve months, then fine it down, and put it into bottles.

WAX AND HONEY (A. Lewin).—There is no special market for them. Apply to Messrs. Neighbour; Messrs. Fortnum & Co., or to other Italian warehousemen.

POULTRYWOMAN'S CHARADE (Suffolk).—The following includes yours and many additions. Why is the hen immortal? Her sun never sets. Why is a hen on a fence like a cent? Head on one side, tail on the other. Why don't hens lay at night? Then they are roosters. Why is the first chicken of a brood like the mainmast of a ship? A little forward of the main hatch. Why is a chicken just hatched like a bull's tail? Never seen before. Why should

not a chicken cross the road? It would be a fowl proceeding. If a ship captain had no eggs what should he do? Lay to (two). And to conclude, a hen is a poor economist, because for every grain she gives a peck.

TO PRESERVE KIDNEY BEANS FOR WINTER USE.—Put a layer of dry salt about half an inch thick in the bottom of a well-glazed earthenware pan, on this a layer of beans about 1 inch thick, another layer of salt, then another layer of beans, and continue in the same order until the pan is full. Keep in a dry cool place. When wanted for use they must be taken out in layers.—C. L. S.

METEOROLOGICAL OBSERVATIONS, CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	A.M.					IN THE DAY.						Rain.
1872.	Barometer at 2 p.m. and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Temperature.		Radiation Temperature				
August		Dry.	Wet.			Max.	Min.	In sun.	On grass			
We. 7										Inches.	deg.	
Th. 8	29.521	65.0	61.5	S.	61.1	72.0	57.4	116.2	57.9	0.310		
Fri. 9	29.620	60.2	58.5	N.W.	60.5	72.2	50.3	123.5	49.8	0.030		
Sat. 10	30.466	68.0	58.3	S.E.	59.8	71.5	47.8	109.9	45.7	0.032		
Sun 11	29.691	66.0	59.4	S.	60.4	70.0	56.8	109.1	53.7	—		
Tu. 12	29.782	62.1	54.8	S.W.	60.4	67.8	55.3	121.2	53.0	—		
Mo. 13	30.067	61.2	55.3	N.W.	59.8	70.8	52.0	119.2	49.9	—		
Tu. 13	30.206	61.2	56.2	W.	59.3	73.6	45.1	127.8	43.8	—		
Means	29.646	62.7	57.7		60.2	71.1	52.1	118.1	50.5	0.352		

REMARKS.

7th.—Tolerably fine till 6.30 p.m., then very dark with vivid lightning, distant thunder, and heavy rain at 8 p.m.; but fine at night.

8th.—Fine early, but rain at 9 a.m.; rather bright just before noon; thunder at 2 p.m., showery after 4 p.m.; but fine at night.

9th.—Very fine early, rather storm-like at noon, but a fine day.

10th.—Fine morning, with rather a strong breeze; a fair but not bright day.

11th.—Beautifully fine at 6 a.m., but clouding over before 9 a.m., and rather so all day, with strong breeze.

12th.—Fine throughout, with splendid sunset, and starlight night.

13th.—Very fine all the morning, with bright sunshine, and so continuing all day.

Much less stormy and rather warmer than last week, but by no means warm for the time of year.—G. J. SIMONS.

COVENT GARDEN MARKET.—AUGUST 14.

The state of the market and the prices remain nearly stationary. A limited quantity of English fruit finds its way here, but the imports are large this week, and go far to supplement our deficiencies. The Potato trade rules very heavy, with large stocks and much complaint of the blight. The last cargo of West Indian Pines is reported in the river; they have not been so good nor so cheap as during the last two or three years.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	1	0	Mulberries.....	1	0
Apricots.....	2	0	Nectarines.....	6	0
Cherries.....	0	0	Oranges.....	1	0
Chestnuts.....	0	0	Peaches.....	8	0
Currants.....	1	0	Pears, kitchen.....	2	0
Black.....	0	0	Pears, dessert.....	2	0
Figs.....	4	0	Pine Apples.....	1	0
Filberts.....	1	0	Plums.....	1	0
Cobs.....	0	0	Quinces.....	0	0
Gooseberries.....	0	0	Raspberries.....	0	0
Grapes, hothouse.....	1	0	Strawberries.....	1	0
Lemons.....	1	0	Walnuts.....	1	0
Melons.....	2	0	ditto.....	1	0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	4	0	Mushrooms.....	3	0
Asparagus.....	1	0	Mustard & Cress.....	0	0
Beans, kidney.....	3	0	Onions.....	0	0
Broad.....	3	0	Pickling.....	0	0
Beet, Red.....	1	0	Parsley per doz. bunches	3	0
Broccoli.....	0	0	Parsnips.....	0	0
Cabbage.....	1	0	Peas.....	1	0
Capsicums.....	1	0	Potatoes.....	0	0
Carrots.....	0	0	Kidney.....	0	0
Cauliflower.....	2	0	Round.....	0	0
Celery.....	1	0	Radishes.....	0	0
Coleworts.....	2	0	Rhubarb.....	0	0
Cucumbers.....	0	0	Salsafy.....	0	0
Endive.....	0	0	Savoy.....	0	0
Fennel.....	0	0	Scorzoner.....	0	0
Garlic.....	0	0	Sea-kale.....	0	0
Herbs.....	0	0	Shallots.....	0	0
Horseradish.....	0	0	Spinach.....	0	0
Leeks.....	0	0	Tomatoes.....	0	0
Lettuce.....	0	0	Turnips.....	0	0
			Vegetable Marrows.....	0	0

POULTRY MARKET.—AUGUST 14.

TRADE will now be almost at an end for some time. Grouse have begun, but they are too recent to permit a quotation.

	s. d.	s. d.		s. d.	s. d.
Large Fowls.....	8	0	Hares.....	0	0
Smaller ditto.....	2	0	Rabbits.....	1	0
Chickens.....	2	0	Wild ditto.....	0	0
Geese.....	6	0	Pigeons.....	0	0
Ducks.....	2	0	Pheasants.....	0	0
Guinea Fowls.....	0	0	Partridges.....	0	0

WEEKLY CALENDAR.

Day of Month.	Day of Week.	AUGUST 22—28, 1872.	Average Temperature near London.			Rain in 43 years.	Sun Rises.		Sun Sets.	Moon Rises.		Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m.	h.	m.	h.	m.	h.	Days.	m.	s.
22	Th		71.6	49.7	60.6	17	58	af 4	6	af 7	1	af 9	18	2	35
23	F	Keighley Horticultural Show.	71.8	49.0	60.4	21	59	4	4	7	18	9	19	2	19
24	S		71.6	47.9	59.7	16	1	5	2	7	36	9	20	2	3
25	SUN	13 SUNDAY AFTER TRINITY.	74.1	49.7	61.9	16	3	5	0	7	0	10	after.	1	47
26	M		72.5	48.4	60.1	15	4	5	58	6	29	10	22	1	30
27	Tu	Banbury Horticultural Show.	73.3	49.1	61.2	12	6	5	56	6	5	11	23	1	13
28	W	Crystal Palace—Metropolitan Floral and Fruit Show.	72.7	49.7	61.2	19	8	5	54	6	51	11	24	0	56

From observations taken near London during forty-three years, the average day temperature of the week is 72.5°; and its night temperature 49.1°. The greatest heat was 89°, on the 25th, 1859; and the lowest cold 31°, on the 26th, 1861. The greatest fall of rain was 1.32 inch.

FLOWER GARDENING.



HAVE been interested of late by several communications in the Journal relative to the desirability of a more extensive cultivation of the hardy and simple class of flowers which have almost fallen into disuse, but there are signs that their restoration to public favour is drawing nearer and nearer as each year rolls round.

In my younger days as a gardener—I am by no means an “old hand” now—I became convinced that our system of flower-garden decoration was a system of extremes, and that the worst of all extremes—artificialism. I could not help regarding the plan which required two-thirds of the year for preparation to produce just half that time of pleasure and enjoyment as bordering on the absurd, and I have many times felt that I could not defend my craft when I have seen in spring and early summer a dreary expanse of nothing in the cultivated garden, while the uncultivated part of this beautiful earth was full of interest. I could not but think that when the sun of spring awoke into beauty the slumbering genius of Nature, when bank and brae, earth and air, were welcoming summer, that a garden at such a time bleak and bare, and destitute of flowers was, and is, a misnomer. I thought all this in my boyish enthusiasm, and in manhood I think so still.

Do not, reader, anticipate a tirade against the bedding-out system—I am its friend, not its enemy. I love flowers of all sorts and at all times, and I love to see them, and to grow them too. I can enjoy in the fullest sense the massive beauty of the modern formal flower garden in autumn, I can appreciate the skill in elegant device and nice balancing of colour, and can heartily rejoice in the success of those who are successful in producing these grand displays. I go further and say, that when required, I can go heart and soul into preparations for this particular style of garden-decoration; but I cannot give to it my whole energies, or concentrate on it my entire resources. I cannot wholly ignore the claims of spring and summer, and bring them into absolute and complete subserviency to autumn. I give to autumn its full share, but nothing more, and because of this I feel I am not an enemy but a friend to the bedding-out system.

There never was an extreme yet but in time defeated itself: the reaction always comes. A good thing usually continues long if used, but certainly dies if abused.

Holding these views firm and long, I determined, if ever I had an opportunity, to give a fair share of attention to the early months of summer in then making the garden bright, and for some years I have been able on a small scale to indulge in that which I felt was right. I have carried it out on the bedding system, and have carried it out on the mixed or natural system. I have tried these plans, and have made a special point of ascertaining which was the more generally pleasure-affording. If the essence of good government consists in doing the greatest good to the greatest number, the essence of good flower gardening

may be properly adjudged to be that which provides the greatest and most continuous pleasure, and elicits and sustains the greatest interest and admiration.

There can be no justification, that I know of, for disguising the fact that apishness almost amounts to a principle, and exerts a vast influence on social usages. Flower gardening is not an exception. A grand example of a certain type of gardening is produced. The style is exactly in harmony with the place and its surroundings. Adequate conveniences are provided for the preparation of a given class and number of plants for a given end. Working and results dovetail, as it were, into each other to a nicety. The effect of the whole is striking, imposing, beautiful. What is the result? It may be summed-up in the illustrative sentence, “I must have a bonnet like missus;” and then commences the scheming and dodging in manufacturing the means. I know too well that in the matter of preparations for bedding-out the analogy is perfect. I have a vivid recollection of the unreasonable amount of labour which has fallen to my lot in this respect. I have for weeks together spent my days in watering, in moving plants, and in scheming conveniences, besides the ordinary routine duty, and had perforce to trust to candle light to keep master of the potting. I have potted until twelve at night and past that hour night after night, and many times not seen bed at all for fear of being too late at my post in the morning, and Sundays have been anything but days of rest. All this was for an idea—being “like missus”—it was done for bedding-out in a place not adapted for it, lacking conveniences, and when all was done that could be done, lacking the effect desired.

Depend upon it, owners of gardens have, and can have, but little idea of the extraordinary efforts made by gardeners to carry out a type of flower gardening in places where proper conveniences are denied, or they would provide means of working or be satisfied with a different mode of floral decoration—one simpler, more suitable to the place, and one which, by its manifest fitness, would in most places be more agreeable and pleasing.

But in fairness it must be said that the responsibility of much of the present muddle by attempting too much does not rest with employers, but with gardeners themselves. I am proud of the energy and enterprise of the craft to which I belong, and believe that much of the success of gardening is due to the spirit of emulation existent amongst the workers. This perseverance is generally admitted and appreciated. But recognising this, one cannot be blind to the fact that it is sometimes overdone, inasmuch as it is not always prosecuted under the governance of sound and good judgment.

A gardener, especially a new beginner, is perhaps rather too prone to “go ahead.” He must make alterations—do something grand. He has seen a pattern—a result, and must imitate it, forgetting that a perfect success is in one place comparatively easy, while in another mediocrity in the same style is next to a certainty. One has not to go far to see that mistakes of this nature are frequent. A man attempts what his place is not adapted for. He

increases his work, and so long as he can master it, even by extra exertion, he does not complain, but as soon as he finds he has overreached himself—when he finds he cannot keep things to his mind, he applies to his employer for more assistance and is refused, and thinks himself hardly dealt with, when, at the same time, independently of the question of expense, the master would greatly prefer his plan as it was before the “improvements.” This is a very common order of things, ending too often in much discomfort, and by the master being regarded as a churl and the man as a grumbler—appellations unjust to both.

In determining on a particular style of flower-garden decoration a few conditions must be attended to—conditions dependent on position and surroundings, circumstances and conveniences, and the particular time at which the greatest display is most desired by owners. The last condition is very important, yet how commonly it is ignored! It is surely disappointing to both master and man that after months of preparation and attention, and just when results are approaching the height of beauty, the time has arrived when those for whom all is provided must leave for their annual autumnal tour. “I must go, but so regret leaving my garden, the full beauty of which I never see and enjoy,” is the parting lament of many.

Under such circumstances the bedding-out system is wrongly selected to give the greatest amount of pleasure. Under different circumstances, as when the summer months are selected for travelling, and the return home is in autumn, then by no other plan than bedding-out can such a rich floral welcome be provided for family and guests. A style may be perfectly right in one place, and perfectly wrong in another.

So much for time and circumstances; and now for position and surroundings independent of time, but not of circumstances. Perhaps the greatest number of proprietors of flower gardens are those who have no stated period of leaving home for any length of time. They are always at hand to enjoy whatever is provided for enjoyment at whatever time. Well, such have a perfect right to indulge in their own personal tastes, and if they prefer to go without flowers for three months in summer for the sake of two grand months in autumn, no one has any right to interfere, especially if they provide proportionate means and conveniences, and do not press unduly on any poor dependant, and expect him to get blood out of stone. But, putting aside personal tastes as subservient to broad principles, I am satisfied that in half the places where bedding-out is attempted, a system less formal, more easy, and less costly, would be more suitable and satisfactory.

Without elaborate reasoning I will submit as my notion, that the places which in themselves are best adapted for the bedding-out plan are those in which a considerable amount of labour has been expended in their formation; where Nature has as much as possible been shuffled out of the way by art; where everything is done by mathematical lines, and symmetry reigns supreme. The severe formality of such places seems to require a style of decoration correspondingly formal, and it can be had in perfection in some type of the art of bedding; and in such places special provision is generally made to carry out a system well.

But there is the other class of places—plain, unassuming British homes, large and small, where only the gentlest touches of art ought to be seen, and these ever subservient to the boldness and ease of Nature; where the knolls have not been levelled, and the little undulations raised to one smooth straight line; where old trees, irregularly yet tastefully disposed, form a feature in the home; where there is nothing ornate in the architecture, and only one idea prominent, and that suggestive of a comfortable unpretending residence. Our island is favoured in having very numerous mansions of this class dotted over its surface. In such places I cannot but think that, of all the styles of flower gardening, that most suitable and pleasing is the mixed system, for there should be some system even in mixture.

This plan, when well carried out, is enjoyable, enduring, easy, and inexpensive, and better adapted for hundreds of places, because easy to carry out, than attempts at florid bedding which cannot be carried out well for want of adequate means.

It is at one of these plain old English homes embosomed amid stately trees of noble growth, where mere show and artificialism in any form have no abiding place, that it is my pleasurable duty to labour and live. As in many other very old places, only a mere plot is set aside for flower gardening; but

this has for many years, because in perfect harmony and character, been principally conducted on the mixed system. It has been found in practice also specially suitable, in that the family generally leave home in August for a term of several weeks, and would thus, had it been conducted on the bedding system, miss the period of greatest display of this particular and popular style. The plan laid down as right in theory is thus proved sound in practice. Besides, however, there is, for comparison, a little bedding-out which if not well done is so from want of ability, and not from want of care, attention, and interest. Now, these are only two very small examples of flower gardening, yet they are as sufficient for comparison as if they were measured by the acre. They are simply divided by a wall and door, and are convenient for comparative examination and judgment.

In the lapse of a few years the two styles have been inspected and criticised by hundreds of nearly every rank—lords and ladies, clerics, nurserymen, and gardeners, have compared and weighed them in the balance. For myself I have a standing self-imposed rule to which I inflexibly adhere, and that is, not to offer any opinion at all, but to listen and gather the opinions of others as to the relative amount of pleasure the two types of gardening give. I note such most carefully, and find that the palm is given to the mixed garden by an immense majority, and am perfectly justified in saying that fully eight-tenths prefer the mixed beds to the more artistic and formal mode of planting. It is quite common to hear expressions such as this—“What a nice design! how complete and well filled! It is really very pretty, but, after all—yes, after all, there is a quiet charm about the mixed beds that one likes to linger over, and wishes to see again. I must say I like mixture the best, but can scarcely tell why.” Such expressions every year appear to become more frequent, which seems to indicate that the time is arriving when the old style of flower gardening can no longer be laughed down.

I must add that such comparisons are not frequent after the middle of August, and, perhaps, for the following six weeks, opinions might be more nearly equal. The mixed beds also may show to special advantage because the situation is peculiarly suitable. But are there not hundreds of other places also suitable?

Besides the consideration of season and position another condition is necessary to good mixed flower gardening, and that is large beds of plain outlines. Fanciful needle-pointed paths are quite unsuited for the system. I should state that I do not exclusively grow hardy herbaceous plants, but everything that will add interest is laid under tribute to contribute its mite. I hardly know whether it is worth while to enter on the working of a plan so simple. The notes must either be very short or rather lengthy, but I have said enough for the present.—J. WRIGHT, *Gardener to Hon. A. L. Melville.*

STRAWBERRIES ON A LIGHT SOIL.

EVERYBODY taking an interest in Strawberry-growing must feel thankful to the Rev. C. P. Peach for his excellent and impartial information, both as regards his mode of culture and the description of the sorts grown by him. I can fully endorse what Mr. Peach says of cultivating Strawberries in a light soil, as I happen to find myself here in exactly the same circumstances. I had previously occasion to grow Strawberries in France under similar circumstances during my long stay in that country, near Fontainebleau, and in seasons where the cockchafer grub was not too troublesome, obtaining very fair results in spite of the continuous droughts but too frequently occurring in France. I am glad to say that here I have not thus far met with my old and cruel enemy the grub, and consequently am fully satisfied with the mode of cultivation described by Mr. Peach.

I am pleased to see Mr. Peach speaks so strongly in favour of Sir Joseph Paxton, a Strawberry which I consider for all purposes one of the best ever raised, and for which great credit is due to Mr. Bradley. It will sooner or later become the very Strawberry for market purposes; fruit large, handsome, of fine colour, and carrying well. The plant is, moreover, of a very healthy constitution, and bears even in a young state most abundantly.

As a very early kind, quite as early as Vicomtesse Héricart de Thury, I would recommend Dr. Roden's Early Prolific, which is much handsomer in shape, finer in colour, and unrivalled as regards flavour. Frogmore Late Pine undoubtedly requires a stiff soil to ripen off its noble fruit to perfection; here my young plants bore well, but soon afterwards suffered much

from the intense heat, and I am afraid will not do for another year.

Mr. Radclyffe is not identical with Dr. Hogg,* and rather belongs to the British Queen race, which it resembles.

Mr. Peach's strong recommendation of Lucas is worthy of attention, as too much cannot be said in its praise. In France I never could do anything with that noble Strawberry Dr. Hogg, whilst here thus far it has thriven well, and promises a better result.

As a late sort I would recommend Aromatic, sent out by Mr. Turner. I had fifty plants last October, and although planted so late, they all bore a comparatively fine crop of large fruit of a handsome cone shape, and of exquisite flavour. They ripened quite as late as Frogmore Late Pine, which is an additional merit. I would advise Mr. Peach to try likewise James Veitch, which will admirably suit his soil.

I am sorry to see that Black Bess is still mentioned as a distinct Strawberry, whilst it is but justice to Mr. Knevet, of Isleworth, that it should be grown under the true name, *Empress Eugénie*.

Bonne Bouche here was neither large nor handsome, but its peculiarly agreeable flavour will make it a welcome addition to the list. I suspect that Royalty, sent out last year, is nothing else than Myatt's Eliza; at any rate it is impossible to detect the slightest difference between the two. The same may be said of Brown's Wonder, quite like Cambrian Prince, sent out by Messrs. Roberts, in Denbighshire, several years ago.—FERDINAND GLOEDE, *Oppendorf, Hamburg*.

LILIUM AURATUM MERITS AND CULTURE.

HAVING read Mr. Robson's interesting article on *Lilium auratum* (page 127), perhaps you will allow me to make a few remarks upon it. I quite agree with him that *L. auratum* is a grand flower, and where it is happily placed a most easy plant to grow. This year, with us, it has prospered most in the shade, where it was kept back so as not to have the tall shoots hurt by the May frost. The shelter of shrubs, as in a *Rhododendron* bed, secures not only *L. auratum* but the earlier, and therefore more susceptible, *L. longiflorum*. I need hardly say that the varieties of colour in *L. auratum* are almost endless; there are also the many-flowered varieties and the few-flowered (which last I prefer), with their huge broad-petalled flowers. Of these I think the dark-banded crimson-dotted variety, the petals of which are hardly recurved, is the most beautiful. There are also the early and late-flowering varieties, and those of tall and short growth. I have just measured one in a *Rhododendron* bed very nearly 8 feet high, with others not more than half the height close by.

I must demur to *Lilium auratum* being considered the head of the Lily family. I am in correspondence with the principal Lily-growers, and have found that we, one and all, have settled down into what I believe to be the old faith of the Japanese, that *L. speciosum* (*lancifolium*) is queen. Its varieties *album*, *punctatum*, *roseum*, *rubrum*—all are lovely, and the sub-varieties are endless both in colour and growth, from the squat compact form of the late-flowering true old *speciosum* (*lancifolium*), with its deep crimson not mingling with the white, to the stately *L. speciosum* (*lancifolium*) *splendidum* of Loddiges, a plant of which I have to-day measured standing in its pot 7 feet 9 inches high, and at the bottom of its flowers 2 feet 6 inches across.

Mr. Robson speaks of "the newer kinds of Lilies which have come through his hands having botanical rather than floral claims to distinction." I wish he had seen the admiration, as a garden plant, excited at Birmingham by a spike of the beautiful Lily, *L. Robinsoni*, brought from the Rocky Mountains by Mr. Robinson. *Lilium tigrinum* *Fortunei* is beautiful side by side with *auratum* in a *Rhododendron* bed; and when we get the rare *tigrinum* *splendens* 8 to 10 feet high, with its noble head of flowers with the large spots, the effect will be superb. In a rockwork here we have at the top a large clump of *L. tigrinum* *Fortunei* in bloom, mixed with *speciosum* not out; a little lower *L. superbum* *pyramidale*, with its tall graceful stem, in large bud; and below *L. Leichtlinii* in bloom; the effect is considered good. *L. puberulum* is a most effective garden Lily; *L. tigrinum* *flore-pleno* too, and having no pollen, it lasts well, and as the bulbs get larger it will, I think, equal *tigrinum* *Fortunei* in height. There are many other "new" Lilies which, though hardly yet sufficiently tested in the open, will, I doubt not, hereafter have their great merits done justice to by Mr. Robson in his garden, and in our

JOURNAL OF HORTICULTURE.—GEORGE F. WILSON, *Heatherbank, Weybridge Heath*.

THE CLOVENFORDS VINEYARD.

HAVING lately paid Mr. Thomson a visit, I can say I was amply repaid for my trouble in taking so long a journey. The vineries are the best and largest I ever saw, and considering the short time they have been planted, the crop of fruit is superb. A really good crop on Vines planted only two years since is something to be proud of.

As may be supposed, I asked to see Golden Champion, and it looked in its then half-ripe state really fine. Mr. Thomson told me it had shown no signs of the spot either with him or his brother till last season, when he had a few berries which went spotted. I could not help saying, "Then you do not consider we are all muffs who have failed to grow it?" But I found it was too sore a subject to joke about. "Would that my enemy would send out a new Vine," said he with an air of great vexation.

He then showed me the finest new Grape I ever saw, the Duke of Buccleuch, of which he had planted scores of Vines. If this do not turn out the best new Grape of our time I shall be deceived. It is earlier than the Black Hamburgh, and larger than the Golden Champion, and appeared in its then state all that could be wished. "I will grow a ton weight of this Grape next year, and if it show no fault, will let you all have plants at half price who purchased the Champion of me," said Mr. Thomson. If he do so, I for one shall be quite satisfied.—J. R. PEARSON, *Chilwell*.

COTTAGE FLOWER GARDENS.

I HAVE no doubt my friend, "D., Deal," will think me very obstinate, but I cannot quite agree to his dictum that we ought to keep bedding-out from cottage gardens. I do not see why every cottager may not please his own taste. Those who may like old-fashioned cottage gardens, with tall and short perennial spring and autumn plants all growing together in a mixed border, need not insist that his next-door neighbour should do the same. I by no means wish to do away with the old plants to be found in cottage gardens, but neither do I find fault with those who have a small space of garden in front of their houses, if they try to keep pace with the age, and take advantage of some of the most lasting half-hardy plants to make their gardens gay in summer and autumn.

I can only say that in my own parish by far the best cottage gardens are to a certain extent bedded-out, and I find those who are fond of flowers and pay most attention to them, and are the most successful in keeping their cottage gardens oftenest gay, are the very ones who have adopted the system of bedding-out to the greatest extent. I do not want in making these remarks to let your readers conclude that I am in favour of cottagers adopting the bedding-out system exclusively; but as nobody, and more especially no cottager, can grow every kind of plant, I claim for cottagers, as well as others, to grow whatever kind of plants they prefer.—C. P. PEACH.

GARDEN STRUCTURES AND IMPLEMENTS

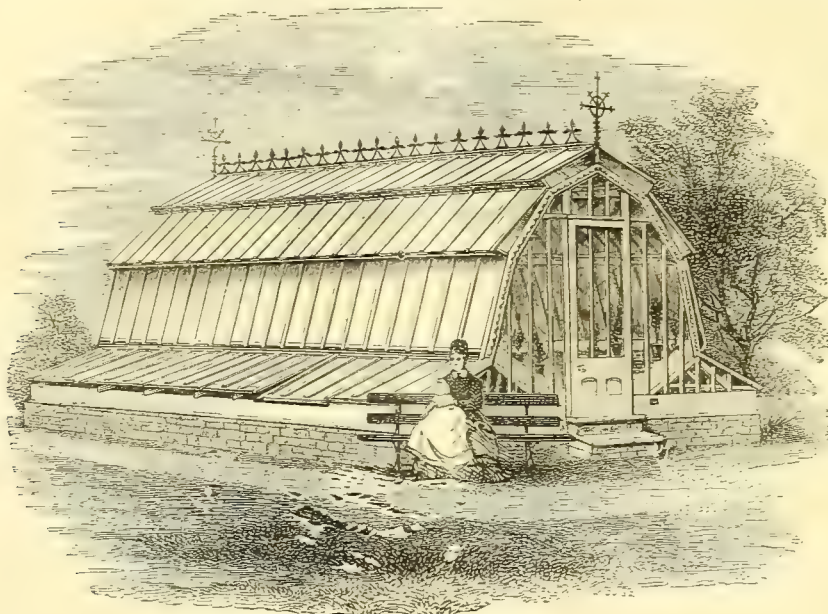
AT THE ROYAL HORTICULTURAL SOCIETY'S
BIRMINGHAM EXHIBITION.—No. 3.

IN continuing our remarks on the horticultural implements and structures at Birmingham, we come next to Stand 64, Messrs. W. S. Boulton & Co., Rose Lane Works, Norwich. They exhibited a very nice ornamental conservatory, 43 feet by 19, though the price, £167, struck us as somewhat large. There was also a very useful tenant's portable greenhouse with centre and side staging. We were much pleased with the Melon and Cucumber frames, and the portable plant-preservers, which were strong, serviceable, and moderate in price. They were adjudged a medal.

In Stand 65, Messrs. Cranston & Luck, Highgate Street, Birmingham, exhibited several of their horticultural structures; a gardener's greenhouse, 24 feet by 18, price £75, of which we append an illustration, being a very efficient and useful house, with a range of pits on each side and connected with the house, being heated from the house and with the same apparatus as the house itself. The stage for the plants is connected with the outside framing of the pit, and is made to carry the house itself, which can be fixed either upon dwarf walls, or on the ground. The ventilation in this house and in all the other houses erected in this stand was carried out by the patent system which has now been for some time in use by this firm, and of which we append the description given by them in their circular. The houses are made of wood, and the roofs "are divided into

planes, or steps, with pierced ventilation-plates between them. Through the perforations in these plates the air passes into the house, entering all over the roof surface, and circulating—in the case of vineries—between the glass and the leaves of the plants. Valves are applied to the inside of the plates, so that the whole or any part of the house may be opened or closed at will. The

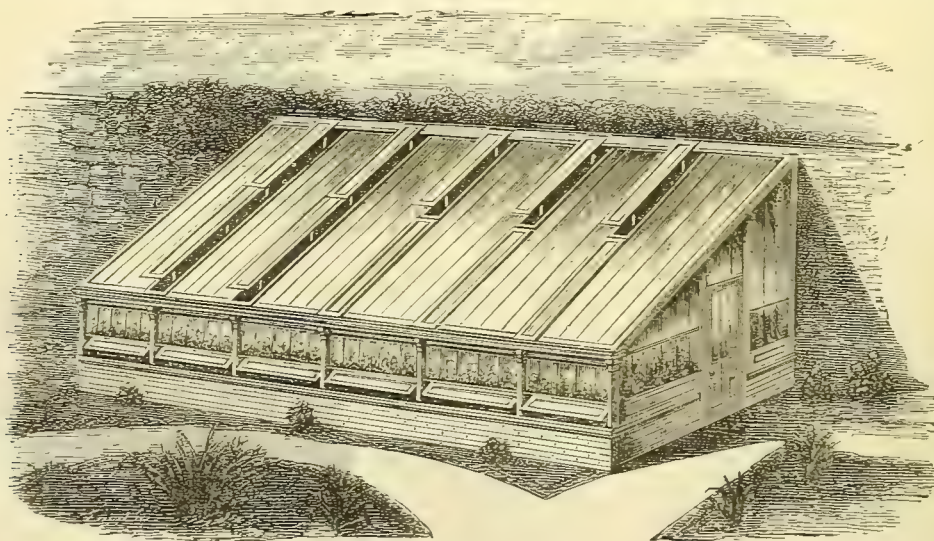
planes between the pierced plates are formed of bars and glass, each of the bars being made in two parts, triangular in section, and grooved to act as small gutters. The half-bars are screwed top and bottom to the ventilation-plates, and the glass is laid upon them, the edges of the panes coming up to the small gutter in each bar. The top parts of the bars are screwed down into



Cranston's Gardener's Greenhouse

the lower half-bars, closely upon the glass, with square-headed galvanised screws, turned by a key. By this mode of glazing, which is both wind and water-tight, putty is not required, and an unskilled labourer can perform the glazing of a whole house as well and as easily as the most expert glazier. The planes of wood and glass, with the pierced ventilation-plates between

them, are supported on laminated wood 'principals,' formed of three thicknesses, and made to assume any canted or arched contour that the width and height of the house may require. By this mode of construction buildings of any width up to 50 or 60 feet may be erected; and the cost of the widest house would scarcely vary from a narrow one—of course allowing for



Richardson's Lean-to House.

the area covered and its cubical contents. Under the 'principals' of the houses stout wooden plates are placed, and these rest upon dwarf brick walls; or, when the buildings are intended to be moveable, as tenants' fixtures, upon wooden blocks let firmly into the ground. Between these bottom plates, which are framed together with a space varying from 7 to 20 inches between them, pierced boards are fixed, at the back of which louvre ventilating shutters are made to open and close.

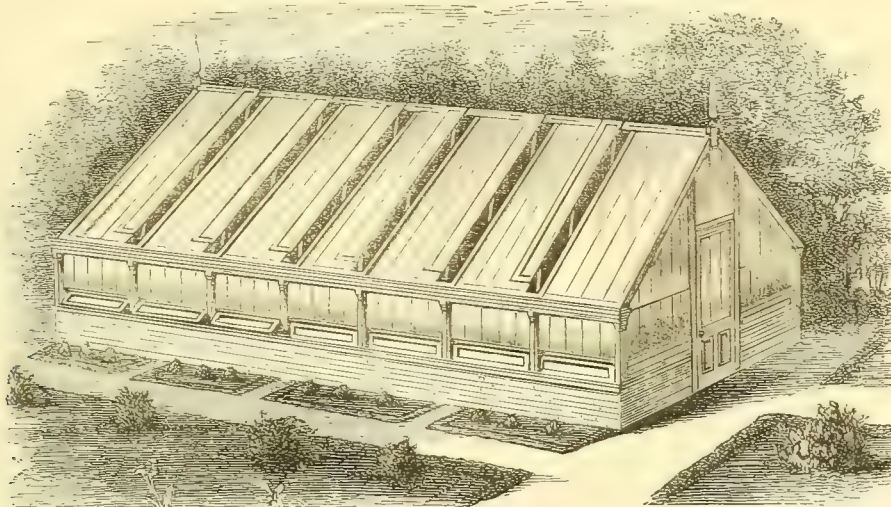
"By the regular diffusion of the air as it enters the house,

gaining admission as it does immediately under the glass, a perfect and effective system of ventilation is maintained, and this without moving lights of any kind; all glass being fixed and made quite independent of the ventilating apparatus. By this means the breakage of glass in windy weather, or from other causes so frequent where glazed sashes have to be opened to admit air, is entirely avoided.

"The glass in the roofs and other parts of these houses is always in long lengths, and without 'laps.' So thoroughly

diffused is the air in this system of building, that every piece of glass has its separate quatum of air opening immediately under it: and all the openings being immediately under control, wherever the sun may shine hottest, there air may at once be admitted through the ventilation-plate, to curl up along the inner surface of the heated glass.

"As all the ventilation openings are in horizontal positions, well sheltered by the overhanging wood and glass, the ventilation of the houses can go on as well in wet weather as in dry. All vertical openings in roofs have the great disadvantage of admitting rain as well as air, and in wet weather houses so made are subject to one of two evils—either a close and poisonous at-



Richardson's Span-roofed House.

mosphere, or water everywhere. By recent improvements in the ventilation-plates of these patented buildings, even the most driving storm is wholly prevented finding its way through the perforations, even though the buildings stand in the most exposed situations."

Passing from Messrs. Cranston & Luck's stand we came next to that of Messrs. Dennis & Co., Anchor Works, Chelmsford, who exhibited a wrought-iron ornamental span-roofed conservatory, which had too many cross-ties and iron connecting-rods to please the eye, though as the construction of the house was light they were most probably necessary. The same firm also exhibited a villa greenhouse, and a small amateur greenhouse to be erected as a lean-to against a low wall, at the cost, not including walls or fixing, of £5. The material was wrought iron, and the house would be very serviceable for those who wished to put up a small house at a slight expense.

Stand 67.—Mr. Perry, of Banbury, exhibited a span-roofed house of good shape, but we do not like the introduction of strong, old-fashioned lead bars.

Near to this was erected stand No. 61, by Mr. Bickley, Smallbrook Street, Birmingham, which we thought a good serviceable house, and as cheap for the price as any exhibited.

The next stand we came to was that of Messrs. W. Richardson and Co., of Darlington, who exhibited two very good and useful houses, one a lean-to 40 feet by 12, for £77; another a span-roofed, 30 feet by 15, for £92. They were fitted-up with their patent system of ventilation, of which we append the patentees' description:—

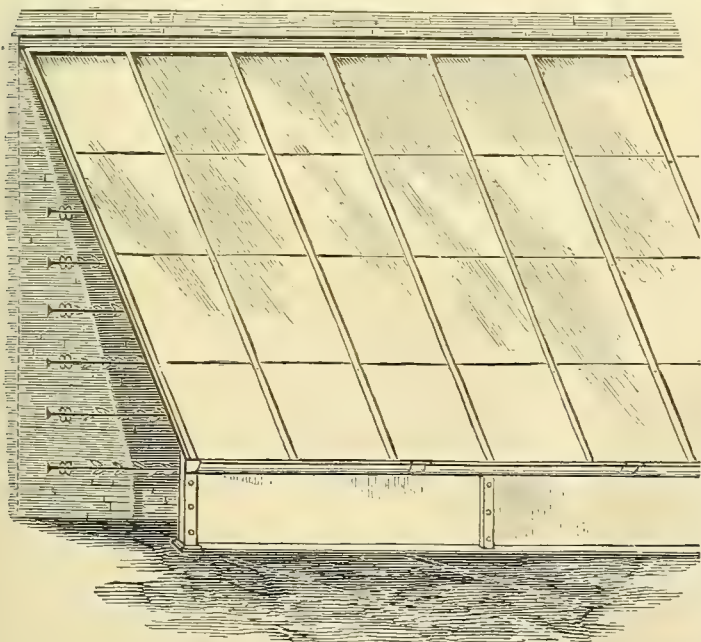
"The patent system of ventilation is effected, as herein shown, by narrow openings in the roof (about 9 inches wide), the full length of the lights from top to bottom, and from 4 to 5 feet apart, covered with glazed frames made perfectly weather-

tight with grooves up the sides, fitting down on to galvanised iron tongues; these frames are 4 inches wider than the opening they cover, and when lifted are clear above the fixed lights, leaving an open space at both sides as large or as small as may be desired, thus allowing a free and even circulation of air throughout the house, and at the same time protecting the interior effectually from rain, wind, or a direct down-draught upon the plants. These ventilating roof-lights are made in either one or two parts, each separate set or range from one end of the house to the other being simultaneously opened and regulated by a single handle placed in the most convenient position, and balanced in such a way as to be easily worked by a lady. Any ventilating light can, if desired, be thrown out of gear, so as not to open with the rest, or it may be lifted entirely off for glazing without the removal of screws.

"In the houses with front lights, bottom ventilation is obtained by wood-panelled doors or flaps along the full length, and about 8 inches wide, these also opening and being regulated by a single handle to each range, and affording complete protection from the weather; the air is thus admitted below the level of any foliage and immediately over the hot-water pipes, by which it is slightly tempered on entering the house."

This method of ventilating under the staging is, in our opinion, preferable to the system of opening the whole front lights by means of levers and cranks, which brings the cold air direct on the plants.

The next stand was one from Mr. Parham, of Bath, containing different forms of glass houses, wall-fruit protectors, glass walls, patent



Parham's Glass Walls.

iron espalier trainers, and a very useful iron stile called a ladies' stile, which moved on pivots sideways to allow a person to pass, and then closed again after passing. The glass in the house was fixed in a special manner. The mode of construction consists in using specially rolled channelled iron rafters, on which the side edges of the glass are laid, the squares overlapping each other at their ends. Along the rafters over the edges of the glass, iron cover plates are fixed in lengths corresponding with the panes, with flanges or tails to hold up the glass, screw pins with brass nuts retaining them in position. By this arrangement the glass is securely kept in place without being nipped upon the iron, so that either the iron framework or the glass is free to move under the influence of variations in temperature, whilst the channelled rafters carry to the eaves-gutter any rain which may get under the cover-plates and effectually prevent the possibility of its dropping into the house.

Stands 70, 71, 72, and 73 were occupied by collections of plants, Conifers, &c., exhibited by Mr. Smith, of Worcester; Dickson, of Chester; and Vertegans, of Edgbaston.

Stand 74.—Messrs. Carter exhibited their large collection of seeds, roots, &c.

Stand 74a, contained a very useful collection of charcoal filters of all sizes, exhibited by Mr. Busse, of Manchester, and which will be found of great service wherever the water for the use of the house is liable to be contaminated by any impurities, and we can strongly recommend them to the use of paterfamilias or mater.

In stand No. 75, Mr. Unite exhibited a collection of small tents, flexible tarpaulins, rope, and cordage, all of good quality. Stand 76 we have already described at stand 34. In 76a were a collection of garden-pots. 77. Mr. Weeks exhibited his boilers and models of boilers; and 78 was another boiler by Mr. Clarke; and 79 contained Mr. Rendle's exhibits, which we have already noticed. Stand 80 contained models of ash-screening closets, &c. From Messrs. Bamford, Stand 81, came garden engines, water-barrows, &c.

In Stand 82, Phipps & Co., Gold Street, Northampton, exhibited rustic flower vases, garden seats, arm chairs, &c., and some of the other accessories of the croquet lawn. Stand 83, Messrs. Hill & Smith, Dudley, showed ornamental flower stands, hanging flower-baskets, &c.; Stand 85, Leicester vases, seats, tables, &c. In Stand 88, Mr. Inman, Rose Bank, Stretford, Manchester, exhibited a variety of rustic garden houses, rustic tables, vases, seats, stools, &c.

Mr. Harris, Bristol Street, Birmingham, in Stand 89, had a very good assortment of garden implements. We could have wished that, as Birmingham is the centre of the hardware trade, there had been a greater variety of ordinary garden tools shown, as rakes, spades, trowels, forks, &c., as it struck us, and we have little doubt others as well, that there was, as a rule, a great deficiency in these smaller useful articles. Stand No. 90 was occupied chiefly with wirework; and in Stand No. 91 was one of the most beautiful collections in the Show of fountains, vases, &c., from Mr. Andrew Handyside, of Derby.

This concludes our general summary of the exhibits, and we shall conclude another week with a review of the different boilers exhibited at the Show, which we have hitherto deferred, hoping that the full report of the trial of boilers at the Show would be published, but it seems unnecessary to wait any longer. Although we cannot but regret that the full report has not been given to the public, yet we must also raise our protest against the manner in which some of the disappointed exhibitors have tried to throw discredit on the whole trial. It was a very thankless office to act as judge, but when some of the exhibitors have been defeated, it is very unjust, and we might add un-English, to accuse three judges who have, no doubt, done their best to give a fair trial to all, of combining together to favour a particular maker. If judges are to render themselves liable to accusations of this kind, it will soon be difficult to get persons to act at all.

BOILER TRIALS AT BIRMINGHAM.

At a meeting of competitors in the trial of boilers at Birmingham, held at Kettlewell's Rooms, Covent Garden, on the 14th inst., the following protest was unanimously agreed to:—

To the LOCAL COMMITTEE OF THE ROYAL HORTICULTURAL SOCIETY'S MEETING HELD AT BIRMINGHAM, JUNE, 1872.

Protest of the competitors at the late trial of boilers at the Lower Grounds, Aston, Birmingham, against the decision of the Judges, by which they assigned the gold medal to Messrs. Hartley & Sugden, of Halifax, against the evidence and in violation of the regulations for the conduct of the trials, which award, therefore, the undersigned believe to have been improperly made, and which should, therefore, in their opinion, be withdrawn. The undersigned base their protest upon the following facts:—

1. The boiler to which the medal was assigned was entered in the catalogue as being of the value of £15 10s., whereas the true value was, as they, supported by the opinion of other boiler

makers, believe, double that amount; and thus the regulations of the Committee were violated, and the boiler ought to have been excluded from competition; in proof of which they refer to the Witley Court boiler, very similar in construction, and only about 6 inches longer, and which was sold, with fittings complete, for £54. This latter boiler was awarded a silver medal by the same Judges.

2. Messrs. Hartley & Sugden's boiler was entered for 1000 feet of piping, but was in the first instance tried with only 500 feet, and was after this again attempted to be tried with the same length of piping, but upon the remonstrance of some of the competitors the trial was discontinued, and it was afterwards tried for 1000 feet. The size of this boiler was excessive for the quantity of pipe (500 feet) with which it was tested, and therefore any result obtained by such trial was unfair.

3. The first trial of this boiler, though so large, and set with the greatest care, under the immediate and careful supervision of Mr. Sugden, of the firm of Hartley & Sugden, by the person in the immediate employment of the Judges for the management of the trials (which person supplied the fuel, took the management of the fire, and, indeed, conducted the trial throughout), was yet a palpable failure, as it failed to preserve a fire and proper heat during the night, and the fire was found to be out and the pipes cold in the morning.

4. In the judgment of the competitors this failure, after so full and complete a trial under such highly favourable circumstances, ought to have entirely disqualified the boiler in question from further competition.

5. After the above failure, the boiler was allowed to be reset with extended masonry, new arrangement of doors, flue frames, and dead plates, and thus made really into a different boiler from the one originally entered for competition; and, contrary to custom in similar cases, and contrary to the expectation of the other competitors, this new, or renovated, altered, and improved boiler, was allowed to be tried a second and a third time, and thus secured the medal, the whole of the new fittings used being supplied by Mr. Hassall, one of the Judges.

6. Application for a second trial, made by two at least of the competitors (Messrs. Cannell and Deards), owing to the inclemency of the weather, and under circumstances much more clearly justifying a concession, if such were allowable at all after a full and complete trial of any boiler, was refused by the Judges, and therefore ought not to have been granted to Messrs. Hartley and Sugden.

7. Whilst desirous of avoiding any imputation of wrong motives or conduct, the competitors cannot divest themselves of the conviction that there was shown to Messrs. Hartley and Sugden a great amount of partiality by the Judges, and that those gentlemen were in their third trial supplied with fuel of a much superior character to that supplied to the other competitors.

8. The undersigned believe that Messrs. Hartley & Sugden failed to show the essential qualities of a boiler calculated to command a general sale or use, inasmuch as it was evident to them the boiler would, in order to keep up a regular and uniform heat in the required quantity of pipe, demand constant and unremitting attention during the day, and that it could not with any safety or security be left for a long winter's night without attention, or without the certainty of being found in the morning with the fire out and the pipes cold, as the competitors believe was the case in most, if not all, the trials made with this boiler.

9. The boiler is of too costly a construction to be generally useful, and therefore does not meet the requirements of horticulturists, or the conditions of the trial.

10. The competitors consider that no person should be allowed to judge an article or articles of which he is a seller. In this instance such, however, was the case, Mr. Hassall, one of the Judges, being a dealer in the boilers manufactured by Messrs. Hartley & Sugden; this alone should disqualify them for competing for a prize.

11. That after the three trials they, Messrs. Hartley and Sugden, did not gain the points which are the most essential in a good hot-water boiler, the water in the pipes being cold, and the fire out (or nearly so), on examination at the unsealing in the morning.

12. That no report has yet been published, although the trials terminated six weeks ago, and repeated applications have been made by the competitors. (Signed)

HENRY CANNELL, *Chairman*.
FREDERICK JOHN MEE.
T. H. P. DENNIS & Co.
B. HARLOW.

SAMUEL DEARDS.
THOS. GREEN & SON.
EDWIN LUMBY.

FINE LILIAM AURATUM.—We have here a very fine specimen of *Lilium auratum*; it was one bulb shifted on, and is now in a 20-inch pot. Nurserymen and gardeners calling here tell me they have not seen anything approaching it in size. Height 9 feet, number of blooms 185; the largest flowers 11 inches in diameter. There are six strong stems—two with twenty-two flowers a-piece—and several smaller stems. In 1870 there were

twenty-three flowers a-piece on two stems; last year every flower-bud was destroyed by frost. Please say is the size unusual? [Very.]—A. ANDERSON, *Glenlee, Hamilton, N.B.*

ROYAL HORTICULTURAL SOCIETY.

AUGUST 21st.

No finer weather than that which now favours our southern harvest could be desired; and though the fashionable world has now for the most part taken its departure to the Continent, the seaside, or the moors, there are yet in a city so vast as London, with its wide-spread suburbs, stay-at-homes sufficient to make a goodly company; and thus it was there was a fair attendance at this Show, though not equal to what there was earlier in the season.

The Gladiolus was the flower which had the leading position on this occasion, and right worthily it was represented. The Hollyhocks were also good, though few.

In the open class for twenty-four cut spikes of Gladiolus there were four exhibitors. Messrs. Kelway & Son, of Langport, Somerset, were first with splendid spikes bearing flowers of remarkable size. The varieties were Madame Desportes, Lamirus, Palici, Helicon, Osi, Oâsis, Latour, Lydus, Mira, Lycoris, Maria, Otus, Helores, Helle, Orcus, Opici, Origin, Hallen, Lacépède, Rossini, Hecate, Osci, Hemon, and Herdonia. Mr. Douglas, gardener to F. Whitbourn, Esq., Loxford Hall, Ilford, was second with an excellent stand consisting of seedlings, with Virgile, and a few named kinds. Messrs. Standish & Co., of Ascot, were third with a stand of named kinds of their own raising, some of them very distinct in colour. Mr. J. Welch, gardener to J. Marshall, Esq., Belmont Park, Taunton, was fourth.

The next class was for twelve spikes. In this the Rev. Lord Hawke, Willingham Rectory, Gainsborough, was first with Celimène, Lacépède, Orphée, A. Brongniart, and Horace Vernet, in magnificent condition, and fine spikes of other kinds. Mr. Douglas was second. The third prize went to the Rev. H. H. Dombrain, who had Norma, white, noticeable as the finest spike in the Show. Mr. Welch was fourth. For six spikes, the Rev. H. H. Dombrain, Westwell Vicarage, Ashford, was first with Michel Ange, Norma, and Meyerbeer, very fine; and good spikes of Adolphe Brongniart, Madame Vilmorin, and Rosa Bonheur. Lord Hawke was second, Rev. J. G. Hodgson third, and Mr. Douglas fourth; the latter had Virgile, splendid vermillion.

Hollyhocks were only shown by three exhibitors—viz., Mr. W. Chater, Mr. J. J. Chater, and the Rev. Lord Hawke. Mr. W. Chater was first for six spikes, and Lord Hawke took a like position for twelve blooms. Mr. W. Chater and Mr. J. J. Chater also exhibited fine stands of blooms not for competition. Mr. Chater's spikes consisted of Midnight and Queen of Yellows, very fine; Walden Primrose, Alfred Chater, and two seedlings. Lord Hawke's blooms comprised several fine seedlings, Phryne, Constasy, Purity, Leviathan, and some other named sorts.

In the class for twelve cut Phloxes Mr. Parker, of Tooting, was first with spikes inserted in pots, so as to form fine masses, but giving no idea of what the individual spike is like, and therefore a mode of exhibition, however effective, by no means to be commended. Messrs. Downie, Laird, & Laing, of Stanstead Park Nurseries, Forest Hill, were second.

Of twelve Hardy Perennials in 12-inch pots there was only one collection shown—viz., that from Mr. R. Parker, of Tooting, who took for it a first prize. It comprised *Tritoma Uvaria glaucescens*, *Helianthus rigidus*, of which the yellow flowers are very showy, *Galega officinalis alba*, *Sedum spectabile*, *Helianthus orgyalis*, and *Tanacetum vulgare crispum*, two plants with ornamental foliage; *Campanula carpatica*, *Tanacetum boreale* with elegantly-cut foliage, and a fine specimen *Phlox*.

Among the miscellaneous subjects were two pots of *Agapanthus umbellatus* from Mr. Larke, Rockham Terrace, Moore Park, Fulham, each with six fine heads of blue flowers; a pan of the highly-ornamental rich scarlet *Nerine Fothergillii* from Messrs. Standish & Co., of Ascot; and from the same firm a magnificent basketful of *Vallota purpurea*, one of *Bouvardia Vreelandii*, which has been frequently shown before this season, and a large collection of Gladiolus. Messrs. Kelway also sent a numerous and remarkably fine collection of the same flower. From Mr. J. J. Chater, Gonville Nurseries, Cambridge, came an excellent collection of Asters and a stand of fine double Zinnias.

FRUIT COMMITTEE.—G. E. Blenkins, Esq., in the chair. The following letter was read from Dr. Hooker in reference to the recent action of the Committee in connection with the dispute between Dr. Hooker and the Chief Commissioner of the Board of Works:—

"Royal Gardens, Kew, August 8th, 1872.

"SIR,—I have to request that you will convey to the members of the Fruit Committee of the Royal Horticultural Society my most sincere thanks for the valuable opinion they have been so good as to express on the subject of the responsibility, as regards heating apparatus, which should attach to whoever is responsible for the cultivation of plants under glass. Whatever may be the issue of the difference of opinion now made public in reference to the

control of the apparatus now in use at Kew, I feel sure that the opinion of the Fruit Committee of the Royal Horticultural Society will carry a greater weight than that of any other body whatever.

"Again thanking you for fortifying me with this timely opinion,

"Believe me, most faithfully yours,

"JOS. D. HOOKER, Director.

"G. Wilson, Esq., Chairman Royal Horticultural Society's Fruit Committee."

Mr. Barron read the following report of his investigation of the Duke of Buccleuch Grape, raised by Mr. Thomson:—

"In accordance with your instructions, I visited Clovenfords last week and saw the Vines growing there. Mr. Thomson has it planted pretty extensively—1st, Twenty-two Vines in one house at 6 feet apart, two rods to each Vine, the rest of the house being filled with Black Hamburg, Golden Champion, and other sorts; 2nd, About forty Vines on either side of a span-roofed house at 9 feet apart, three rods to each Vine, the rest of the house being filled with Muscats, Golden Champion, &c. The whole of these Vines were planted in the autumn of 1870. The greater portion of the crop (800 lbs.), had been cut previous to my visit. There were still, however, about 250 bunches hanging, which enabled me to arrive at a pretty good idea of its bearing qualities. There was a singular uniformity in the appearance of the whole, both as regards the growth of the plants, general productiveness, size, colour, and general appearance of the bunches and berries. In growth it somewhat resembles Canon Hall Muscat, Mill Hill Hamburg, and Golden Champion, the shoots being rather gross, and in some instances not ripening berries thoroughly. Generally, however, the wood was well ripened, the leading shoots being very strong and thoroughly ripened, of about the thickness of one's thumb. I could detect no spot or other blemish on the berries; whereas the Golden Champion alongside, although large and well grown, was much spotted. As to ripening, in comparison with the Black Hamburg grown in the same house under the same circumstances, it was much earlier—evidently some weeks. Few of the Hamburgs were ripe or fit to cut, whereas the most of the Duke had been cut and sent to market a month previously. The Hamburgs were, however, overcropped, which tends to retard the ripening. The Muscats under the same treatment had not begun to colour, whilst the Duke was dead ripe; and at Drumlanrig, the Muscats being ripe, the Duke was quite overripe and spoiled. Golden Champion, also, by comparison was quite green and acid. At Clovenfords and at Drumlanrig each Vine of this variety seemed to have fruited as freely as a Black Hamburg, one bunch to each spur; the bunches being of a fair average size of from 1 to 2 lbs. each, and some larger. Grafted on the Muscat it did not seem to do so well; in one instance the fruit was much greener and later, and in another it had not set regularly, some berries being enormously large, and the rest small.

"The Duke of Buccleuch is a Grape which will evidently not keep long after being ripe, being thin-skinned. It is extremely pleasant to eat, the flesh tender and juicy, with a rich sparkling acidity, somewhat of the Hamburg character. The berries are enormously large, round or oblate like the Dutch Hamburg, and have rarely more than two seeds in each. I should describe it as a very valuable summer Grape.—A. F. BARRON."

After giving consideration to the report, and taking this in connection with the fine condition of the fruit exhibited at the last meeting, the Committee awarded a first-class certificate.

Mr. Smith, the Gardens, Exton Park, Oakham, sent three bunches and a basket of Black Hamburg Grapes of excellent quality, which received a cultural commendation. These were accompanied by the following communication:—

"Exton Park, Oakham.

"In taking charge of the gardens here in the spring of 1869, I found the Vines from which these Grapes were cut in a very bad state. The Vines were bearing a large crop of very small bunches, which, instead of ripening, shrank so much that there was not a perfect bunch in all the house. I managed to get a number of moderate-sized rods up from the roots, and by encouraging young wood I thought I would prevent the shanking; but, no, they were quite as bad on the young wood in 1870 as they were on the old in 1869. My employer remarked, 'that they always had shrivelled off, and nothing would prevent it, only by destroying the old Vines and planting young ones.' I asked permission to lift the roots, add fresh soil, and try them another year, which was at once granted. In September, 1870, I commenced operations by lifting the roots and placing them in fresh soil, which consisted of turfy loam, wood ashes, lime rubbish, and broken bricks. After they were lifted I laid all the rods on the floor of the vinery, and encouraged them to make young wood by keeping the house continually syringed till November. Last year the shanking entirely disappeared, and this year they are bearing a good full crop of moderate-sized bunches, which have all coloured well. The bunches shown are an average sample of what the house contains. The Vines are about thirty years old, and had been grown on the spur plan, now they are grown on the extension system.

"August 21st, 1872."

"Gardener to the Earl of Gainsborough.

Mr. Hill, of the Gardens, Keele Hall, sent an excellent bunch of Muscat Hamburg, from a Vine grafted on the Black Hamburg. Mr. Tillery, of Welbeck Abbey Gardens, sent a collection of fruit, consisting of a well-conditioned bunch of Golden Hamburg Grape, a dish of Barrington Peaches, Moor Park Apricots, and Morello Cherries. A cultural certificate was awarded to the Barrington Peaches. Mr. Smith, Bristol House, Putney, sent a dish of Lord Palmerston Peach, the flesh of which was firm and hard, and the flavour inferior. Messrs. Lucombe, Pince, & Co., of Exeter, sent a dish of Pince's Golden Nectarine, a fine-looking fruit, but inferior in flavour. Mr. T. Bray, the Gardens, Nynhead Court, Wellington, sent two dishes of Morello Cherries. Mr. Rooker, gardener to John Gretton, Esq., Cotton Hall, Derby, sent Ward's Scarlet-flesh Melon, and Mr. Hill, of Keele Hall, sent Keele Hall Hybrid, both scarlet-fleshed varieties, but neither of them possessing good flavour. Messrs. Barr & Sugden sent three Cucumbers, severally marked No. 1, 2, and 3. Mr. John Hepper, The Elms, Acton, sent a Cucumber, beautifully variegated with green and white longitudinal stripes.

Prizes were offered by Messrs. Carter & Co. for the best and second best dishes of Runner and Dwarf Kidney Beans, to in-

clude Carter's Champion Runners. The first prize went to Mr. C. Ross, gardener to C. Eyre, Esq., Welford, for Sir J. Paxton, Negro, and White Dutch and Champion Runners—the last named not so long by 2 inches as we have seen them. The second prize went to Mr. Frisby, gardener to H. Chaplin, Esq., Blankney Hall, Sleaford, for very good pods; whilst Mr. Lumsden, Bloxholm Hall Gardens, ceded to none in the quality for culinary purposes of the pods he exhibited, for they were crisp, just as a Kidney Bean should be.

FLORAL COMMITTEE.—W. Marshall, Esq., in the chair. From Mr. Wilson, Mr. Marshall's gardener, Clay Hill, Enfield, came *Lælia elegans Marshallæ*, darker than the usual form; it received a first-class certificate. Mr. Eckford, gardener to Earl Radnor, Coleshill, sent stands of seedling Verbenas, of which Memorial, purple, and Mrs. Lewington, shaded rose, were very fine. From Mr. Keynes, Salisbury, came stands of new Dahlias. First-class certificates were awarded for James Service, dark maroon, very fine both in shape and colour; for the Rev. J. M. Camm, large, yellow flaked with red; for Ne Plus Ultra, pale lilac, very pretty; second-class certificates for Lucy Fawcett, milk white, slightly tipped in some of the florets with purple, and for Mr. Sinclair, rose tipped with purple.

First-class certificates were awarded to Messrs. Kelway for the following varieties of *Gladiolus*—namely, *Lamirus*, salmon, scarlet, and white; *Orcus*; *Helores*, white and lilac; *Osci*, magenta and cream colour; *Grandeur*; *Lycoris*, orange streaked with crimson, and in the lower segments marked with white. Mr. Douglas had first-class certificates for Rosy Morn, white ground, veined, and suffused with rosy purple; *Gwendoline* Morgan, purplish rose and cream colour; and *Day Dream*, salmon scarlet and white, with a slight purple feather.

Messrs. Veitch sent a fine group of Orchids, including *Oncidium macranthum*, *Dendrobium chrysotis*, and *Mesospinidium vulcanicum*; also a group of *Amaranthus salicifolius* lifted from the open ground, and fully justifying the high opinions which have been entertained of it. Messrs. Rollisson, Tooting, exhibited a white-flowered *Saccolabium*, which proved to be *S. Wightianum* album, seemingly a desirable addition to this family of Orchids; and Mr. Laurence, gardener to Bishop Sumner, a species of *Oncidium* from New Grenada, with a spike 10 feet in length, also a good specimen of *Acinetia Humboldtii*.

By far the finest specimen exhibited was, however, a plant of *Nepenthes Rafflesiana* from Mr. Baines, gardener to H. Micholls, Esq., Southgate, and which was, indeed, a magnificent example of that noble Pitcher Plant. It had no less than fifty pitchers, of which forty-seven were fully developed. It was awarded a well-deserved cultural commendation. Similar commendations were also given to Mr. J. J. Chater's *Zinnias*, and Mr. W. Chater's *Hollyhocks*. Mr. J. J. Chater sent a cross-bred *Everlasting Pea*, white streaked with rose colour, also seedling *Verbenas*. Mr. G. Smith, Tollington Nursery, Hornsey, had a first-class certificate for *Fuchsia Delight*, white corolla and scarlet sepals, probably a good market kind. T. R. Tufnell, Esq., Belmont, Uxbridge, had also a first-class certificate for *Lilium Lishmanni*, orange, much spotted with dark crimson. From the Society's garden at Chiswick came some of the best-grown plants of *Amaranthus salicifolius* that we have seen, also a very dwarf free-flowering *Phlox*, called *Heynholdii*, with orange flowers. This had a first-class certificate.

NOTES AND GLEANINGS.

METROPOLITAN FLORAL SOCIETY.—With reference to the notice given in last week's Journal of our contemplated Show, I am glad to tell all lovers of the *Gladiolus* that the finest exhibition of this flower ever held will be at the Palace on the 28th and 29th; for in addition to numerous entries in the classes, Messrs. Kelway & Son will exhibit a collection of nearly five hundred spikes of the very best and choicest varieties in cultivation, including many of their own seedlings. Nothing equal to this exhibition has ever been seen in the metropolis as far as I am able to judge. Messrs. Kelway's display at Kensington last year was very fine, but when to this is added the large number in the competing classes the Show will indeed be a grand sight.—D., *Deal, Hon. Sec.*

—MR. BENNETT, formerly of Osberton, and recently gardener to the Earl of Stamford and Warrington at Enville Hall, has succeeded Mr. Record in the charge of the Marquis of Salisbury's gardens at Hatfield.

—CRICKET.—WALTHAM CROSS NURSERIES *versus* THE OLD CHESHUNT NURSERIES.—This match, which came off on Thursday, the 8th inst., was played in the Cheshunt Cricket Ground, and resulted in a victory, decided by the first innings, for the former eleven. The scores were as follows:—Cheshunt Nurseries, 1st innings, 27; 2nd innings, 68. Waltham Cross Nurseries, 1st innings, 40; 2nd innings, 26, with one wicket to fall. Owing to the quantity of rain which fell in the early

part of the day the game was much delayed, but as soon as the weather cleared up play was commenced, and a capital match ensued. In the evening the party adjourned to the "Green Dragon," where a few hours were spent in a very pleasant manner.

HOLLAND HOUSE,

THE RESIDENCE OF LADY HOLLAND.

It must be told, though it seems superfluous, that this mansion is in the parish of Kensington, and it has been well said, "The house is not handsome; it is not ancient; but it is of an age sufficient to make up for want of beauty. It shows us how our ancestors built before Shakspeare died. A crowd of the reigning wits and beauties of that and of every succeeding generation passes through it to the 'mind's eye' brilliant with life and colour; and there it stands yet, on its old rising ground, with its proper accompaniments of sward and trees to gratify everybody that can appreciate it. May it everlastingly be repaired, and never look otherwise than past times beheld it." The De Veres, Earls of Oxford, were lords of the manor in the Norman era, and some fragment of their residence is believed to remain, but the existing mansion was erected by Sir Walter Cope in the year 1607. By the marriage of his daughter to one of the Riches, who were ennobled as Earls of Warwick and Holland, it passed to the family who are still its possessors.

We must not detail its very various tenants, nor dwell upon the events and acts of which it was the arena when Fairfax, and Cromwell, and Monk were either residents or visitors. Here Ormond was gay, and Addison died; here James II.'s daughter lived in state, and here dwelt William Penn the Quaker. We could lengthen out our list of the tenants if we included others of lesser fame, and could fill a volume if we enumerated its celebrated visitors, and the events they have planned and discussed. Of Wilkie, Talleyrand, Fox, and Mackintosh we have many anecdotes connected with Holland House; but then we should enter upon that ocean of Whig politics with which it has ever been associated. It is more suited to these pages to remind our readers that the garden of Holland House was the first successful home of the Dahlia in England: Sir Joseph Paxton told us that "Indisputable authority shows that this plant was first introduced into this country from Spain by the Marchioness of Bute so early as 1789; but, as it was not subsequently heard of, it is supposed to have been lost shortly after this introduction.

"In 1804, accounts are recorded of seeds of this plant [*Dahlia sambucifolia*] having been transmitted by Lady Holland, from the Royal Garden at Madrid, to Mr. Buonaruti, then resident in this country. From these seeds a few plants were produced, and some of them flowered in the following season; while two others are said to have flowered in the garden of Lord Holland in the autumn of the second year.

"From this period to the year 1814 the cultivation of the Dahlia made very little progress with us, although during this time it had been most successfully cultivated in the royal gardens of Spain, France, and Germany; and from thence roots of several varieties were imported into this country. After 1814 the Dahlia was introduced to more general notice, and cultivated in most collections, but it was reserved for the intelligent cultivators of the last few years to circulate it more extensively, and make the most rapid advances towards a state of perfection. Indeed, so lately as less than thirty years since it was considered a perfectly novel sight to witness Dahlias with double flowers in the garden of a tradesman or cottager."

Any reader desirous of a fuller history of this flower should refer to the first volume of the second series of the Transactions of the Royal Horticultural Society.

The grounds of Holland House are entered by a splendid pair of gates from the high road between Kensington and Hammersmith, and is approached through an avenue of Elm trees. Before the south front is a large square bowling-green terrace bounded by balustrades adorned with flowers in vases, and Orange trees, and in the centre with a large basin fountain. Before the east front is the carriage square.

Before the north front is a terrace walk 200 yards long by 5 feet wide, with a colossal statue of Charles James Fox, which overlooks it from the highest point. Parallel with the east side of these grounds runs a long broad walk under a grove of fine old Elm trees called Louis Philippe's walk, from the circum-

stance of the King of the French having visited Holland House and grounds at the time it was made. The ground rises on all sides to a beautiful knoll in the park, crowned with an old and picturesque Cedar of Lebanon. Fine old Cedar and other trees creep up the slopes, and form groves around the base and along the valley—not thick groves of gloom, but groves in which the forms of the trees are fully developed, and, being planted at various distances apart, producing glades of pleasing landscape scenery.

Before the west front of the house (of which the accompanying is a representation), is a flower garden, a rich parterre and beautiful pattern, the walks brimful of gravel, and the beds overflowing with all the most choice and best sorts of flowers.

It is arranged in the best manner to give the pleasing variety, the contrast, and the distinctness of colours which are clearly and expressly defined throughout the composition, and is seen to advantage when the whole is overlooked from the terrace, surrounded by balustrades, on the top of the banqueting room. It is protected on the north side by a wall, and on the west by the ruins of what had originally been a stable, which is now made, by the stables having been arched with masonry and covered with Ivy, to resemble a ruined aqueduct. An Italian garden runs parallel with it, and terminates in front of the conservatory.

The part of the flower garden nearest the west front of the house is composed of eight very large beds of Roses pegged



Holland House—West Front.

down, a fine mass of bloom, edged in pairs with an *Ecnothera*, Prince of Orange *Calceolarias* in splendid bloom, *Saponaria calabrica*, and yellow *Calceolarias*, with a large fountain in the centre surrounded with Maltese vases filled with plants in flower. Then there is a square piece composed of six long triangular-shaped beds, with a sun-dial in the centre from which the beds radiate. The outside rows in the beds are planted with the variegated *Geranium* Flower of Spring, and the inside rows with scarlet *Geranium*. Small round beds in the centre are planted with Cloth of Gold and scarlet and variegated *Geraniums*, with a broad margin of dwarf Ivy around the whole. A chain border of 50 yards long is composed of fifty-four beds planted in pairs, with *Madame Vaucher Geranium*, *Coleuses*; *Annie*, Flower of Spring, Flower of the Day, *Gloire de Corbeny*, Excellent, Clipper, Princess Mary of Cambridge, *Vesuvius* and other *Geraniums*, bordered with blue *Lobelia* at the back, with *Christine Geranium* and a standard Rose beautifully in flower in the centre of each bed.

Having passed the leafy corridor of young Lime trees I entered the Lily Pond garden. The pond from which it takes its name is encircled by four beds, which are planted in corresponding pairs, with a border of dwarf creeping Ivy; then dwarf *Ageratum*, Cloth of Gold and scarlet *Geraniums*. The oblong beds are planted with Golden-leaved *Feverfew*, blue *Lobelia*, Flower of Spring *Geranium*, *Stella Geranium*, and yellow *Calceolarias*.

Against the north wall of the conservatory is a high bank planted in rows with *Echeveria*, Golden-leaved *Feverfew*, *Sempervivum glaucum*, *Ageratum Imperial Dwarf*, *Baron Hugel*

Geranium, Prince of Orange *Calceolarias*, yellow *Calceolarias*, Orange Lily, with Ferns and the Ivy-clad wall at the back.

Close by is the Italian garden, on terraces bounded by low walls adorned with vases of flowers. The beds and borders are planted with *Mrs. Pollock Geranium* and other good sorts of bedding-out plants.

The conservatory is 60 feet long, furnished with some specimens of *Camellias* planted in the border; scarlet *Geraniums*, *Fuchsias*, &c., in full bloom trained on trelliswork to the pillars 20 feet high; and in winter season with the large Orange trees that now adorn the square before the south front of house. Attached to the conservatory on the north side is a banqueting room of handsome proportions, and furnished in the best style of art and ornamentation. Close to it on the east side is a tower, which is approached by a flight of steps; and from the south side of the conservatory is a colonnade 66 yards long, running east, which is continued to the front of Holland House. By this means a communication under cover is opened from the house to the conservatory, then to the banqueting room, then to the loggia, then to the tower, and home by the flower garden, by the pleasure ground, or by the terrace walk along the whole length on the top of the colonnade.

Passing from the square where Orange trees and other greenhouse plants stand during the summer months, we enter the orchard house, 30 yards long. It contains Peach and Nectarine trees planted against the back wall and in pots, besides Plum and Cherry trees in pots bearing good crops, also *Fuchsias*, *Hydrangeas*, and Lilies of the best sorts.

Having crossed the green drive embosomed in a grove, we

enter a range of glass 45 yards long, heated by hot water, and divided into five parts—1st, young Vines; 2nd, Peaches and Nectarines; 3rd, early vinery; 4th, succession Vines and Figs in pots; 5th, very late vinery. The Peach house and early and succession vineries had splendid crops, the Grapes both large in bunch and berry and well ripened. The Figs were also showing for an abundant crop.

There are two ranges of pits also heated by hot water, 20 yards long, with Cucumbers and Melons in abundance.

Contiguous is the gardener's house, with an oblong bed on grass in front planted with blue Lobelia, Echeveria, Golden-leaved Feverfew, Harry Hieover Geranium, Flower of the Day, and pink Geranium.

A new green walk has been made on the north side of the kitchen garden, planted on each side with Pampas Grass, Prince of Orange Calceolarias, and large bushes of white Feverfew, backed by Dahlias and Holly bushes; also another broad gravel walk running parallel with the walk from the Addison Road, backed with choice trees and shrubs.

The new ranges of houses and pits, and the pleasure-ground improvements were all planned and executed under the superintendence of the head gardener, Mr. Dixon. To him may be applied the words of the epitaph of Sir Christopher Wren, "Visitor, if thou seekest his monument, look around" and see the flower garden in early and full splendour, and abundant crops of fruit in the houses. The crops of Pears and Apples, bush fruit, and vegetables in the kitchen garden, are also very good.

Holland House is surrounded by pleasure grounds so nicely connected with the park that a beautiful and varied landscape is produced, bounded by deep shady groves that form the framework of this delightful picture. In these well-wooded grounds are many fine old trees. An Elm measured 17 feet 3 inches in girth, and two Cedars of Lebanon 14 feet 9 inches, and 12 feet 6 inches each at 2 feet from the ground.—W. KEANE.

THE GERANIUMS AT THE CHILWELL NURSERIES.

THE most convenient way to reach these nurseries is to go direct from Nottingham to Beeston by the Midland Railway, a distance of about four miles. The nurseries are about ten minutes' walk from the railway station. It is not my intention to enter into a full description of all the interesting objects these extensive nurseries contain, but to make a few remarks respecting the splendid collection of Geraniums I had the pleasure of seeing a few days ago.

It is well known that for many years past Mr. Pearson has devoted much attention to the raising of new Geraniums, and money, labour, and house room have not been spared to accomplish his object. To give some idea of the painstaking of Mr. Pearson to enable him to arrive at a just estimate of the merits of his Geraniums, I may mention the fact, that on his own lawn near his residence I saw seventy circular beds, each planted with one separate sort in sufficient quantity to give a good mass of colour, and to test its adaptability for the flower garden. Many of these beds were planted with sorts already in commerce, and others with some that are intended to be "introduced" next season.

Besides these seventy beds, all of sterling merit, I noticed about four thousand seedlings planted in the trial grounds; these have all been carefully crossed, and most of them by Mr. Pearson's own hands. It is from this large number that he has selected those that possess superior properties as compared with kinds already known, and he makes his selection with a keen eye, discarding all those which do not possess points of superior excellence. There are four or five thousand seedlings raised annually, and hundreds are regularly consigned to the rubbish heap, though far superior to many that are sent out at enormous prices.

Besides the above, there was a house 100 feet long filled with a glowing mass of dazzling beauty, far beyond my ability to describe. We often talk about the beauty of our conservatories during the season of Azaleas and Camellias, but nothing could surpass in brilliancy the rich and varied tints of this house of gorgeous Geraniums.

It would be impossible fully to describe all the newest sorts of Mr. Pearson's Geraniums, but I will try to give a rough sketch of some of the leading varieties. I will take them in their separate colours, and first begin with PINKS. For several years he has devoted special attention to this class of colour,

and his labours have been crowned with great success. *Amaranth*, perhaps, possesses the deepest shade of blue of any Geranium yet in cultivation. It is a good bedding variety, of the style and habit of Christine, with plain leaves; the truss compact, with a deep blue-tinted rose colour, and is likely to take the lead in this class of Geraniums. *Rose Bradwardine* is a valuable variety by its profusion of lovely rosy pink-coloured flowers; the habit of the plant is compact and free-flowering, with immense large trusses, and referring to my note-book it is described as being a very good flower. *Rose Peach* is a deep glowing pink, dwarf habit, highly attractive flower, a most interesting variety. *Lady Louisa Egerton* is a bold pink flower with a bright centre, immense truss, the individual flowers very large; habit good. *Mrs. Lowe*, a beautiful dwarf habit, half-Nosegay, with a wonderfully good truss; it will prove a valuable bedding variety from its compact habit of growth, and its profusion of rich flowers. A bed of it in the trial grounds proved its adaptability for flower-garden purposes. *Florence Durand* is a rosy pink with a deep shade of purple. I have it in bloom in the conservatory, and it stands pre-eminent as an in-door plant; its great substance of petal and its freedom of bloom make it equally as good for out-door embellishment. *Mrs. F. Burnaby* produces fine, large, round trusses, the flowers perfect in form and shape, a pretty shade of pink, with a good compact habit; a most effective pot plant. *Amy Robsart*, dark pink, merging into rose; fine habit and truss. *Hon. Mrs. Eden* is a gem, with plain leaves, half-Nosegay, flowers pink shaded with violet, dwarf and compact; a first-class bedding variety.

The foregoing include most of the pinks already sent out, and coming to the SCARLETS and CRIMSON SCARLETS, we have some wonderful productions. The most conspicuous and best in all respects among the scarlets, the most useful either as a conservatory plant or for the embellishment of the flower garden, is *Corsair*. It is a rich scarlet, of perfect form, is so prolific in bloom, so fine in habit, substance, and truss, and so wonderfully good in all respects, that Lord Derby and all others of that class are completely put in the background. *Mrs. Hetley* is a fine bold scarlet, with a very large truss, and answers well out of doors. It is marked in my note-book as one of the best. *Chunder Sen* belongs to the same class of colour, though more dwarf in habit. I think it will prove useful for out-door decoration. *Lord Belper*, dark scarlet shaded with crimson, very large truss; one of the best for bedding. Miss Stubbs, Mrs. Sibray, and Miss Sanders, are all dark crimson flowers, with bold trusses, and good habit. *Thomas Adams* is a fine-shaped flower, red shaded with salmon; also *Charles Burrows*, much in the same way, only a deeper red. *Col. Halden* is a rich rosy crimson, of faultless shape, good in substance, truss, and habit. *Rev. T. F. Fenn*, *Mary Flower*, *Sneaton*, and *Samuel Bennett*, have rich deep crimson flowers, and the trusses are very large and well-shaped. *Mrs. Hole* is also a useful introduction, with deep magenta flowers, of the habit of Violet Hill Nosegay. Then come three other varieties of the Violet Hill type, *Mrs. Vincent Fenn*, *Red Dwarf*, and *Shakespeare*. These are likely to prove the most useful of all for bedding purposes; they have the habit and freedom of bloom of Violet Hill, with a deeper dash of scarlet in their flowers. Violet Hill Nosegay, though one of the very best of all bedding Geraniums, looks pale and washy and meagre by the side of the three last-named sorts.

Among the GOLDEN TRICOLORS I shall mention *Mrs. Docksey* as one of the brightest and most attractive I ever saw. *Lady Manners* was also good, the colours so bright and pure. *Mrs. Pollock* growing near to it looked poor and mean. *William Sandy* is one of Mr. Pearson's best Tricolors. A clergyman who had visited the Chilwell Nurseries, wrote to me from the north of England a short time since that he considered it the most perfect Tricolor he ever saw. I had it growing in a pit during the spring months, mixed up with other similar sorts, and it was always picked out as the best Tricolor we had even by the uninitiated. There were others in this class all good and superior sorts, such as *Abram Bass*, *Miss Locker*, and *Monsieur Durand*, but the above I considered the best.

Coming to the SILVER VARIEGATED section, I may mention as an old favourite one called *Pearl*; it has a broad pure white leaf margin, with a dark zone, the flowers a pretty shade of pink, which contrast most beautifully with the foliage. While on the Silver-edged section I may mention three gems that Mr. Pearson showed me that will not be sent out for some time—*Mrs. Bishop*, *Mrs. William Hollins*, and *Miss Minna Hollins*. They are the most perfect, and free from fault of

anything I ever saw, and there is such a sweetness and softness in the flowers, and such chasteness in the foliage, that the flowers and foliage contribute to each other's beauty. Mrs. Bishop had lilac pink flowers, and those of Miss Minna Hollins soft delicate pink.

I must now return to a few Zonals that will be sent out next season. Some of them were planted out in the trial-grounds in a mass, so that there was every chance of testing them both for out-door and in-door purposes. *Rosina May* was excellent in the open garden; it had a fine bold truss. *Contessa Quarto* was bright and beautiful, with dark pink trusses of bloom. Mrs. Holden and Mrs. Miles were also very good, with fine pink flower-trusses. *Matilda* appeared one of the best as a conservatory plant. I noticed on a small plant in a small pot seven or eight trusses of immense size. Mrs. A. Bass was darker than some in this section; but Mrs. Musters was the finest and the best of this class of Geraniums. I was curious enough to measure one truss, which was nearly 7 inches across. Mrs. Young and Miss Skipworth, however, were also without a fault; the trusses fine, but not so large as Mrs. Musters.

The above lists of Geraniums consist of varieties of sterling merit, and far superior to many popular well-known kinds. Many of those sent out we have growing in our own houses, and without exaggeration can testify to their superior qualities.

I cannot close this paper without adding that the pot Vines were in excellent health, and in a large house of seedling Vines there were several that promised to reward Mr. Pearson for his labour and care in this direction. The fruit trees in the orchard houses were a great success, and whether in pots or planted in the open ground, they were loaded with fine fruit. I was delighted with the system of growing Figs in pots plunged in the open border; the trees were vigorous and healthy, and covered with an abundance of large fine Figs. La Madeleine was among the best and earliest in the collection.—Q. READ.

AMONG THE MANX MEN.—No. 3.

A LETTER from a cleric—a friend of "our Journal," and therefore my friend—has this unnecessary sentence:—"Say something of the Manx women, and don't forget good Bishop Wilson, the most apostolic bishop of the eighteenth century." Just as if it were likely that I should ignore either, specially the first.

"For gentle and kind are its brilliant-eyed daughters,
My vision ne'er pictured one other more fair;
Though lovely and noble have come o'er the waters,
Give me the Manx maid with the dark flowing hair."

Yes, and the very light blue eyes which prevail among them and the truest York-and-Lancaster-Rose complexion. Yet they are a strange mixture of our four races, and such they may well be, for as you stand on the summit of Snaefell—said to be the central point of the British Islands—you can see the mountains of Ireland, Scotland, England, and Wales. The names of places similarly indicate the varied extraction of their original settlers. A large portion of the names begin with *Balla*, Irish for a village, and there are others evidently of English, Scotch, Welsh, and even Danish derivation. One Glasgow lady asserted that the name of this town showed that it owes its origin to her countrymen, and it was of no avail to tell her that it was named after the rivers *Dough* and *Glas*, which here unite, and that both these names are old British.

Many and deep "Traces of History in the Names of Places" are to be unravelled, and those who delight in such researches, as I do, should read and keep as a handbook Mr. Flavell Edmunds's volume so entitled. Let me dabble a little in this lore, and I will only meddle with places named from trees. *Askham*, of Anglo-Saxon origin, for *Aesc*, is the Ash, and *ham*, a village in that language; whereas, if the old Britons had named it they would have used some compound of *Onn*, their name of the Ash, just as they called the Shropshire river Onny—that is, *Onn-uy*, the water near the Ash trees. Again, if the Anglo-Saxons entitled a place in connection with the Oak, they applied their name of that tree, *Oec*, as at Oc-cold, in Suffolk, which means the Oak-holt, or Oak grove; but if the ancient Britons had named a place after that tree they would have used their name for it, *deru*, as they did at the town now called Nant-y-derry—that is, the brook of the Oak.

The Elm thrives in some of the valleys, and I travelled specially to see an avenue of this tree at Kirk Michael. Let no one suppose that this name has any reference to the archangel; it is an entire old Anglo-Saxon name—*Kirk*, church,

and *mycel*, great, alluding to the parish having the episcopal residence. There is not usually any great interest to be felt in an Elm avenue, but there is in that at Kirk Michael, for it was planted by that good bishop of whom our clerical friend wrote, and he retained the bishopric long enough for the trees to have attained such dimensions that the wood from one of them fittingly formed his coffin—fittingly, because he strove to improve the habits as well as the spiritual welfare of the Manx; and no habit then, and still, more needed improvement than that of cultivating the soil; then, and even now, too little attention being paid to planting; thousands of mountain acres might be made beautiful and profitable by judicious planting of Coniferæ. He found the episcopal residence a ruin, but that he more than restored, and showed by example, as he did by precept, the benefits derivable from "large gardens and pleasant walks, sheltered with groves of fruit and forest trees." He lived to do good, and not to accumulate wealth; and although the income of his bishopric was small, and he expended more than that income upon his people, yet he declined to be removed to a richer see, and when the offer was made, replied, "No, I will not leave my wife in my old age because she is poor." So he lived through an episcopate of fifty-eight years, and rests in the churchyard with this enviable inscription on his tomb:—"Sleeping in Jesus, here lieth the body of Thomas Wilson, D.D., Lord Bishop of this isle, who died March 7th, 1755, aged 93, in the fifty-eighth year of his consecration. This monument was erected by his son, Thomas Wilson, D.D., a native of this parish, who, in obedience to the express command of his worthy father, declines giving him the character he so justly deserves. Let this island speak the rest."

I turned from reading that inscription with an increased wish to walk in the gardens the good bishop had founded, but it was a withheld pleasure, for the present bishop only admits visitors to the grounds on Sundays. I could do no more than stand within the Elm avenue and look into the garden. There Jerusalem Artichokes were in abundance. "May be that's 'cause they comes from the Holy Land," said one to whom it would have been useless to explain that the Jerusalem we apply to this vegetable is only a corruption of *Girasole*, the Italian name for the Sunflower, of which it is a species.

Inattention to planting—to the beauty obtainable by the addition and arrangement of out-door flowers, or shrubs, or trees—prevails in every district, and in every enclosure of each district. In England our cemeteries are so planted and adorned as is consistent with the hope that the grave is the portal of Paradise, but it is not so in the Isle of Man. I am of the "Old Mortality" genus, and feel deep interest in searching among the memorials of the dead. In many a graveyard in lone, unhistoried, unrailed country corners, often has the epitaph faced me of some one fondly associated with events in days long ago, and perhaps such might face me in the Douglas cemetery, an unadorned enclosure, well placed for adornment, yet unadorned; so thither I turned, little anticipating among a crowd of tributes to the memory of Manx commonalties, to read this—"In memory of John Martin, historical painter, born at Haydon Bridge, Northumberland, 19th July, 1789. Died at Douglas, Isle of Man, 17th February, 1854." Yes, there remains all that was mortal of him who painted "Belshazzar's Feast." Few of your readers will remember that picture; it was sneered at as tricky, mechanical, theatrical, yet it was marvellously effective; it was original, and no one has succeeded in being similarly effective. Martin was of humble origin, and he left notes of the struggles by which he succeeded in rising and pursuing his chosen path. Those notes show the activity of his mind, but they at the same time show why he failed to be one of the chiefs among artists. No man can be great in any profession who allows his thoughts to be divided among many; he thus reveals the cause of his unsucccess:—"My attention was first occupied in endeavouring to procure an improved supply of pure water to London, diverting the sewage from the river, and rendering it available as manure; and in 1827 and 1828 I published plans for the purpose. In 1829 I published further plans for accomplishing the same objects by different means—namely, a weir across the Thames, and for draining the marshy lands, &c. In 1832, 1834, 1836, 1838, 1842, 1843, 1845, and 1847, I published and republished additional particulars, being so bent upon my object that I was determined never to abandon it; and though I have reaped no other advantage, I have at least the satisfaction of knowing that the agitation thus kept up constantly, solely by myself, has resulted in a vast alteration

in the quantity and quality of the water supplied by the companies, and in the establishment of a Board of Health, which will, in all probability, eventually carry out most of the objects I have been so long urging. Amongst the other proposals which I have advanced are—my railway connecting the river and docks with all the railways that diverge from London, and apparently approved by the Railway Termini Commissioners, as the line they intimate coincides with that submitted by me, and published in their report; the principle of rail adopted by the Great Western line; the lighthouse for the sands appropriated by Mr. Walker in his Maplin Sand lighthouse; the flat anchor and wire cable; mode of ventilating coal mines; floating harbour and pier; iron ship; and various other inventions of comparatively minor importance, but all conducing to the great ends of improving the health of the country, increasing the produce of the land, and furnishing employment for the people in remunerative works." Some of those projects and efforts entitle him to a notice in these pages, but the constant excitement brought to him death. He was seized by apoplexy, and died at the house of his friend, Thomas Wilson, Esq., 4, Finch Road, Douglas, and, by a strange coincidence, the man in whose arms he died stood by my side as I copied his epitaph.

My Manx notes are ended, and I am about to pass over to Furness Abbey, but I fear that my jottings about its monks will not be suitable for this Journal.—G.

POTATOES AT BEDFONT.

"UPWARDS AND ONWARDS" has been so long a contributor of valuable articles to this Journal, more especially as regards potatoes and their culture, the utilisation of house-sewage, and wine-making, that he has become an authority on these matters; for whatever he writes is the result of long experience. As it is now pretty generally known who it is that writes under the *nom de plume* of "UPWARDS AND ONWARDS"—these things sometimes ooze out despite all our care—it will be no breach of confidence to state at once that he is Mr. Robert Fenn, of Woodstock, whose name is identified with many of the varieties to be noticed. Mr. Fenn informs us that he has raised during thirty-five years' practice some 10,000 seedlings, and the pick of these were submitted to an inspection at Bedfont on Friday last. They had been severely "weeded" before by Mr. Fenn, they were weeded again, and the following are those which came best out of the trial.

Foremost among the new round kinds was Rector of Woodstock, a second early, which received a first-class certificate from the Fruit Committee of the Royal Horticultural Society in 1870. It is very smooth, clean, and handsome, a little flattened, very white both when taken up and cooked, of excellent flavour, a good cropper, and, it is stated, an excellent keeper. As regards its appearance, quality, and productiveness, it was all that could be desired, and if it be as good in respect to its keeping qualities, it must be considered a decided acquisition. A cleaner, smoother Potato—one with less eye, less to cut to waste, we never saw. As a late kind, Woodstock Kidney was specially remarkable, being very large and clean; it, too, is excellent cooked, being white-fleshed and by no means waxy. Mr. Fenn considers, however, that the second earlies are far preferable to the late kinds for keeping.

Coming now to other varieties, those already named being in our opinion the best in their respective classes, we have Bountiful, a long-keeping red kidney, a good cropper, and with short haulm; Fenn's Early Market, a very good-flavoured first early round kind, white-fleshed, but, like all the rest of its class, becoming yellow as it grows older; Fenn's Early White Kidney, a small-topped variety, coming in with the Ashleaf, and having even-sized, very smooth tubers; and English Rose appears to be another good variety of the round class, a second early and a good cropper; the skin, however, is pink, and the flesh has also a pink tinge, but we believe that, as with many other coloured Potatoes, it boils pure white. Little Gem, an early kidney, is said to be excellent for pot culture, but of this we had no means of judging. Multum-in-parvo appears to be a desirable variety for suburban gardens, being a miniature Lapstone, which may be planted a foot apart. Other sorts, old and new, noticeable for good quality were Dean's Excelsior Kidney, large and very productive; Waterloo Kidney; King of the Flukes, which may be shown either as a round or kidney-shaped variety; Wellington, fine, late-keeping, second early round; Red Breadfruit, round; Cottagers' Red, a productive yellow-fleshed variety.

There were several of Paterson's varieties, and though these may be very good for field culture, the length of haulm was far too great for gardens; and the American Potatoes, of which so much has been said, did not come up to the mark, their produce being, root for root, not perhaps greater than some of the English kinds, whilst coarser, though less diseased. This mention

of disease reminds us that most of the samples lifted had suffered from it severely; no variety appears to be exempt from its attacks; some may be earlier than others, and so in a great measure escape in one year, and others that may be scarcely affected in that year may suffer most severely in the next. It is possible by growing several varieties that a good crop may be saved where otherwise there would have been next to a total failure, and therefore we consider it prudent not to plant one kind of Potato only but several, as then all the venture is not embarked in one ship.

AQUILEGIA CÆRULEA AND A. LEPTOCERAS.—In answer to your correspondent "A. R.," I am quite aware that the true *A. leptoceras* is a native of Siberia, but it is not the plant meant in your issue of August 1st, page 93; but as the plant I refer to at that page under the name of *A. cærulea* has been figured in the twenty-fourth volume of the "Botanical Magazine," t. 4407, under the name of *A. leptoceras*, I think I was not "confused" in saying "it is also known by the name of *A. leptoceras*," which was quoted as a synonym.—EXPERTO CREDE.

WORK FOR THE WEEK.

KITCHEN GARDEN.

THE destruction of weeds should always be considered an obligation due to the crops as well as soil, the efficient performance of which is weakened by delay. The wet weather which has prevailed lately will probably cause very general activity amongst annual weeds; corresponding exertions should attend their arrival. The various crops of hardy vegetables ought by this time to be fully established, and the general appropriation of the garden ground completed. Precautions for insuring a continued supply of salads should be immediately taken. No further delay should be allowed in sowing for the main crop of *Cabbages*. Attend to the earthing-up of *Celery*, and when the attacks of slugs are apprehended, dust in lime about the plants before closing the earth around them. *Broccoli* will be benefited by being earthed-up a little. The *Endive* should now be fully prepared for planting. The raised beds in an open quarter will be suitable for the main supply, which should now be planted out. The successional planting may be made on a warm border where protection can be afforded, and at a later period get another batch of plants for removal into unoccupied frames. Let an adequate sowing of *Bath Cos* and *Cabbage Lettuce* for spring use be made. Collect herbs for drying, and on no account allow vegetable seeds to remain exposed after maturity on the parent plant. Continue to sow *Radishes*. A bed or two of late winter *Spinach* should be sown about this time. The rapid growth of *Turnips* will compel the use of the hoe frequently. Thin the shoots of *Tomatoes*, particularly where they shade the fruit, and keep the main stems tacked to the wall.

FRUIT GARDEN.

The weather encourages a constant growth of wood on wall trees; it will thus be necessary to attend to them frequently, as well with the view of giving the fruit a full exposure as of laying-in or stopping superfluous wood. If the trained Pear and Apple trees which have been stopped are examined many laterals will be discovered, which should at once be stopped back to one leaf.

FLOWER GARDEN.

The late heavy rains and boisterous winds have caused considerable derangement amongst the flowers. Immediate attention should be given, and all deficiencies from such injuries at once replaced. The propagation of stock for next year's decoration must be actively proceeded with. So much wet weather will increase the amount of active business in every way in this department. The rapid and succulent growth of many plants will demand prompt attention in tying, layering, and other regulation necessary, as well to preserve the fair propriety of the garden as the safety of the plants. The propagation of herbaceous plants, if the stock is deficient in any respect, should be attended to; the division of the old plants will in many instances be the preferable mode. Pentstemons after blooming may be headed back, the smaller shoots will then flower. Evergreens intended for autumn removal should now be prepared for the purpose; a trench should be dug round the tree nearly to the depth of the lowest roots. The advantages attending on early preparation of this kind are manifest. Most florists have now looked over their stock of Tulips and have decided on what they have to spare, and purchasers also are on the look-out for additions to their beds. It often happens that most advantageous bargains may be

made at this season, and I would press on those who are starting in the fancy at once to place themselves in the hands of some respectable grower, stating the amount required, and leaving it to his honour to supply the best strains, &c. Beds of splendid flowers may be thus obtained at a much cheaper rate than if purchased singly. Offsets should most certainly be got into the ground in the early part of next month; therefore, if the bed for their reception is not prepared, let it be done forthwith. Attention must be paid to the layers of Carnations and Picotees. It sometimes happens that the wireworms (young ones almost as thin as hairs), have insidiously introduced themselves into the pith of the layers to their certain destruction. When one is destroyed it is advisable to lift the pegs which hold down the others and closely examine them; if at the section of the stem a branlike appearance is visible the enemy is not far off, and it must be carefully sought for and destroyed, otherwise the loss of the whole of the layers in the pot will be the consequence. New varieties of Pinks had better be purchased now, and old ones planted out. The heavy storms which have occurred of late have made sad devastation where Dahlias have not been properly staked. Attend to tying the side branches out. This is requisite. Remove all malformed flowers. The beauty of bedding plants is of but comparatively short duration in most localities even in the best of seasons, and now that they are in full flower every care should be taken to render them as attractive as possible. Go over the beds frequently and remedy any defects that may be perceptible, such as pegging-down plants that have an inclination to grow too high for the others, and keep the edges of the masses well filled-up without allowing them to become too bulky. Where the plants are still pushing freely some considerable trouble will be involved in stopping the shoots, but this is an operation which must be attended to sufficiently often to keep the plants within due limits, for nothing looks worse than to see them running over the edging or encroaching upon the grass. Attend to plants in vases, taking care that they do not suffer from want of water at the root, and some plants grown in this way may even be benefited by an occasional supply of manure water, provided it is given often and weak.

GREENHOUSE AND CONSERVATORY.

It will now be advisable to house the more tender greenhouse plants; those allowed to remain should be carefully examined, and the assurance obtained that they are receiving no injury from defects of drainage or the presence of worms. The appearance of mildew on any of the plants out of doors should be immediately followed by an application of sulphur. Camellias may be grafted. The operation may be performed with the greatest success by pursuing the method called *greffe en placage*, which is merely inserting that portion of wood that includes a bud and leaf longitudinally into a corresponding cleft in the stock. The grafted subjects should be plunged in bottom heat and kept covered for at least a month. The tender Rhododendrons may be increased in the same manner. Pelargoniums which have been cut down and have commenced to grow may be shaken out of their pots and repotted into others of smaller size. Give attention to Chinese Primulas, and sow Mignonette for blooming late in the season. Those plants which have been retained within the house have very probably been rendered somewhat delicate by such protection, and should be secured from any considerable depression of temperature, at the same time they should be allowed to enjoy the full advantage of favourable weather. The time has now arrived when plants intended to supply a floral display under glass during autumn and winter must have attention. Let Begonias have another shift if not already in pots large enough. Keep the plants thin, that their foliage may be preserved from injury. *Crowea saligna* and *Plumbago capensis* are both valuable autumn-blooming plants, and the latter furnishes a large supply of cut flowers. Attend to *Chrysanthemums*. Water freely with liquid manure. Good specimens should be aimed at rather than a few fine blooms. The earliest winter-flowering Heaths and Epacris must soon be placed under glass, as doing so will forward their blooming. The appearance of bulb catalogues shows that Hyacinths and Narcissus for forcing must soon occupy attention. About equal portions of good soft loam and decayed leaf mould, with silver sand, will be the best soil for them, if for forcing; but well-decomposed cow dung must be substituted for the leaf soil when the bulbs are intended for late flowering. After potting place them on a dry bottom, and cover the pots 2 or 3 inches with old tan or ashes, preserving them at the same time as much as

possible from heavy rains. Under this treatment they will fill their pots with roots, and will be in readiness for forcing when wanted. Van Thol Tulips for forcing may be potted early next month. Place them on coal ashes, and cover them as recommended for Hyacinths, and early in November remove them into heat. The principal bulk need not be potted until late in October, and a last batch of Tournesol or Rex Rubrorum towards the end of November.—W. KEANE.

DOINGS OF THE LAST WEEK.

AFTER the thunderstorms and rains there has been a highly favourable week for the harvest, and for gardening productions as well. The sun at times was bright, and yet the great heat has left us, and we can go about in comfort. Vegetables look quite differently, and even fruit trees are green where, during the early part of the season, the leaves looked half scathed and withered.

Cool Workrooms in Summer.—Looking over the roofs of a manufacturing town, and where much of the work is done in the upper storeys, which are not always ceiled and plastered, and consequently where the heat from the slates must have been terrible in the late tropical weather, we could count only seven roofs that had obtained the advantage of a good limewashing. Putting fresh limewash on slates and tiles when dry with a whitewashing brush is no doubt the best plan, and so done it will often stand a long time, and will thus secure coolness in summer and warmth in winter; but where there is a man-hole or a trap-door to the roof, merely taking a pail of limewash and scattering it over the roof with an old syringe would be a great advantage. We found a potting-shed, roofed with slate and without any ceiling, quite unbearable in the hot days, until the slates outside were freely spattered all over with limewash from a syringe. Whiting itself will do, but it does not stand so long as fresh limewash. Many of our readers who keep a horse, a cow, pigs, &c., under a slated roof without any packing inside beneath the slates or tiles, would greatly promote the comfort of the animals thus housed. Hundreds of men and women might have worked in a temperate atmosphere instead of being baked as in the torrid zone, and worse, because deprived of the free air without draughts, if merely the roofs had been well whitened.

KITCHEN GARDEN.

Celery.—We regulated and cleaned Celery plants. This season, from unavoidable causes, we are much later than usual. The little trouble given in clearing out suckers neatly and tying each plant, is anything but labour thrown away.

Potatoes.—Much time has been occupied with hoeing among all advancing crops and taking up, as after the thunder and such deluges the disease presented itself. This is as yet chiefly confined to close heavily-cropped gardens, and we fear, therefore, that cottagers will be apt to suffer. We have as yet noticed little or nothing of its presence in the open fields, and by-and-by people will find out that the opener and larger the fields, in moderation, and the less they are divided by hedge-rows and timber the better will the crops be, and the more safe will such crops be from disease and other enemies. We saw no trace of disease on Potatoes helped forward early, or grown on steep banks out of doors. It is only those on the flat that have been troubled, and thus there is an indirect advantage in earthing-up in such a season of flooding rains. When once the haulm is attacked it is useless preserving it, and cutting it off close to the surface of the ground will often—not always—prevent the tubers being affected, and it is better to have tubers not full grown than have them unfit for use. We felt almost sure that late Potatoes after such heat and rains would be affected, especially in confined places. Taken up at once the ground could be cropped with Winter Greens, or with early kinds of Turnips and Horn Carrots, which would produce a great amount of food before the winter. Even with such occasional failures, felt to be a heavy misfortune by our cottage gardeners, it is strange, but true, that the most of such gardens are still filled with the Potato, to the exclusion of such rich nourishing vegetables as Parsnips, Dwarf Kidney Beans, and Scarlet Runners. Even a short row of the last-named, topped and made into a compact mass without stakes at all, will yield gatherings for four months, and when gathered young, and kept closely gathered and well cooked, hardly anything can be more delicious.

Cabbages.—We find now and then a man starts out of the beaten track. For instance, the other year a man sowed Atkins' Matchless Cabbage in the middle of July, planted it

out in rows 16 inches apart, and a foot apart in the row, and besides a fair allowance to himself and family, the winter being favourable, he sold enough of crisp early Cabbages to pay the rent of his cottage and garden. This, of course, was a little exceptional. This man could cut nice, crisp, hearted Cabbages a fortnight before we had them equally good, and it was the earliness that paid him. All slops, soap-suds, &c., were saved in an old barrel at the end of the garden farthest from the house, and when dry the Cabbages drank in the liquid and rejoiced in it. We recollect seeing this little piece of Cabbages in June, and again in the middle of July, and if there had not been a daily cutting of the second growth, every stool would have produced three or four nice little Cabbages. "Ah!" said the man, "it is little use selling these now, they are more valuable here than in the market; but these early ones, didn't they pay primely, and got me out of a little difficulty from being laid aside for a few weeks, and no wages, you know!"

Allotment Gardens.—As we are writing something at ease, and wish to put down what we think, we should like to record our opinion that whenever a labourer or an artisan possesses a garden he should have the sole and undoubted control of the produce. In some cases this may not work so well as could be wished, but on the whole it is the best and common-sense view that can be taken of the matter. Instances have several times come under our notice where the landlords of cottage gardens and allotments have objected to anything being sold; have stated, "We wish that ground to be cropped solely for the benefit of your family, and if you have more than is needful for that, we will let some one else have a portion." Now we think the whole of such interference is based on a misapprehension of the case. When a man pays for his garden and allotment he has a clear right to deal with the produce to his best advantage. In the case referred to above, the fine piece of early Cabbages could not have been used with advantage, and the man, but for the money obtained for them, could not so soon or so easily have righted himself. Provided there is due industry developed, the less interference there is with results the better it will be for everybody.

Sowing and Planting.—We sowed Spinach for the main winter crop, Onions to grow and draw, Radishes for succession, and Lettuces to stand the winter. We shall again sow a few Cauliflowers for early work at the end of the month. We planted out Endive where we could find an opening. When it is desirable the plants should stand the winter, ridges, the same as advised last year for Lettuces, are the best for this purpose. On these ridges we did not lose a plant in winter.

FRUIT DEPARTMENT.

The work has been much the same as in previous weeks. We have almost finished *nipping-in* and *foreshortening* bush and pyramidal trees out of doors. When we made pet objects of such trees and could overtake the work, we used to do the pinching early, by the time the shoots were from 3 to 6 inches in length, and then by merely nipping out the points, we have had fully the half of the Plum, Cherry, Apple, or Pear shoot left clothed with plump fruit-buds in the autumn. Very often, however, gardeners, even the young and most energetic, find it impossible to get at their work in time, and must overtake it as they can with the means at their disposal. For all bush and pyramidal trees the mode of early pinching is the true one. Plant the trees as lately adverted to—that is, on hillocks, with the roots near the surface; mulch to encourage the roots near the surface; pinch out the points of the shoots early; and even without root-pruning or replanting there will be no difficulty in having compact little trees, say from 6 to more feet in height, and rather wider at the base, clothed with flower-buds, and yet having enough of luxuriance to perfect well-swelled fruit. Most of our pyramids show that they will have a fair amount of flower-buds, but shortening shoots as late as this will do little or nothing to cause flower-buds to form at the base of the shoots made this season.

Fruit Crops.—We are sorry to say that all the larger fruit out of doors will be deficient this season, and we do not think that on the whole the quality will be good. Visitors tell us that we have more than our share—say, for instance, Apples and Pears, but they are nothing to what we used to have, and even greatly inferior to those of last year, which was not up to the mark. Though some of our Apples and Pears look well, others have a stunted appearance, as if they refused to swell freely. We felt sure that the sleets and frosts of spring would tell on the blossom, which might struggle through. We never had a finer show of bloom.

Small fruit on the whole did well, and we would have had abundance if we could have kept out or terrified intruders. We have no love for the sound of gun or pistol in a garden; but if such sound is never heard in a country place, and no cat must be seen, the birds will have their own way with buds and fruit, do what you will otherwise to prevent it. Netting will be of no use if the meshes are larger than half an inch, and what net will keep out rats, except one of fine wire? This season rats for the first time have cleared off numbers of Gooseberries, making a mere pastime of climbing the bushes. What with new arrangements, protected Dutch barns, and asphalt floorings at the farm, they cannot house themselves there, and therefore we have more than the usual allowance. An adept set twenty-eight traps one night, and had twenty-seven rats next morning.

ORNAMENTAL DEPARTMENT.

As stated lately, to keep our lawns properly has given us far more than the usual trouble and labour, but the beds, on the other hand, have troubled us little in the way of watering; so if we look for it we shall generally find some counterbalance to stop all useless grumbling. After the rains we had to pick the beds again, and to remove from the Scarlet sections of Pelargoniums many of the larger leaves, to throw more strength into the flower-stems, and now, after such a week of fine weather, the appearance again is very nearly all that can be wished.

We must remark here, however, that to have things passable, and everything as neat, complete, and trim as may be, requires a very different outlay of attention and labour. We often compromise the matter by keeping the extra neatness nearest the mansion, and allow matters to get rougher farther away. We prophesy that ere long in many places where there are large lawns the practice will come on of allowing the more distant parts to be left rougher, merely cutting them two or three times in the season. We feel sure that in many cases the contrast between the rougher ground and the more thoroughly dressed would be found agreeable rather than otherwise, and the labour power could be better employed.

Gladiolus.—We do not think much of these by themselves, whether for beds or lines; but in either case they do well when mixed with other plants—with low evergreens, as Rhododendrons—and in large beds or back rows of borders, where they either mix with or have separate rows with such subjects as tall Ageratums and Salvia fulgens. We have frequently had a fine row of the scarlet Gladiolus in patches 2 feet apart, and then a Salvia planted between. As the Gladiolus failed, and most of the flower-stems were gone, the Salvias came in and supplied their place. We say nothing of growing them in pots, but all the hardier kinds will stand out of doors if kept from severe frost and rather dry. When the plants are in rows it is a good plan to raise a little ridge over them, and cover it with rough half-rotten dung or leaf mould. They may stand two or three years in the same place, but they will deteriorate if kept there longer, as the new corms so form on the top of the old ones, that the roots cannot have free access to the soil. Deep planting—not less than 6 inches—is also important. If taken up, the corms may either be planted again in fresh soil, or, if early in winter, may be kept in any cool dry place until they just show signs of moving, when they should be sized; and we think they do best when some fine corms, or bulbs as they are generally called, are planted in a group, placing one in the centre and the others round, at from 4 to 6 inches from each other.

We shall begin next week to propagate a few plants for the flower garden, commencing with Verbenas and variegated Geraniums, and finishing with Calceolarias at the end of October, but we fear that we can say little that will be fresh.—R. F.

TRADE CATALOGUES RECEIVED.

W. Cutbush & Son, Highgate, London, N.—*Bulb Catalogue* for 1872.

William Paul, Waltham Cross, London, N.—*Bulb Catalogue*.

TO CORRESPONDENTS.

N.B.—Many questions must remain unanswered until next week.

Books (Lodge).—In the first place we would give your gardener the cheap manuals from our office, and the "Cottage Gardeners' Dictionary." When he had mastered these, then we would recommend Thompson's "Gardener's Assistant," or London's "Encyclopedia of Gardening." In addition to the

manuals, the "Science and Practice of Gardening" would be most useful. These are frequently advertised in our columns.

BACK VOLUMES (J. O.).—If you advertise them at a moderate price you will probably hear from some one who would purchase them.

PENCILS FOR ZINC LABELS (Subscriber).—Ink pencils and labels may be procured of any of the principal London seedsmen.

ROSE LEAVES MILDEWEED (T. Freed).—The "white mealy substance" is a parasitic fungus, one of those known popularly as "mildew." Syringe and then dust the leaves with flowers of sulphur; mulch over the roots of the bushes, and water liberally. The purple-flowered Peas are produced by some field Pea, probably the Maple, accidentally mixed with the seed of Champion of England.

RATING NURSERYMEN'S GLASS HOUSES (Nurseryman).—We think they are rateable.

CABBAGE HEART LEAVES TWISTED (H. C.).—We have many complaints of Cabbages being blind and other defects, and this indicates that the seed was imperfectly ripened.

WHAT IS A BLOOMING PLANT? (W. B.).—We think that a Fern is not eligible to compete in a class specified "Single specimen, stove or greenhouse plant, in or out of bloom."

SPRING-FLOWERING BULBS (A. C.).—*Adonis vernalis*, *Anemone apennina*, *A. fulgens*, *Bulbocodium vernum*, *Hyacinthus*, *Narcissus*, early Tulips, *Crocuses*, *Snowdrops*, *Winter Aconite*, *Iris pumila*, *I. reticulata*, double *Anemones*, *Cyclamen coum*, *C. Atkinsi*, *Scilla sibirica*, *Helleborus niger*, *Hepaticas*, *Leucojum vernum*, and *Triteleia uniflora*. These have none of the Lily habit you wish for, and we do not know of any that have. They will bloom by April.

WATERING ORCHARD-HOUSE TREES (An Amateur).—Instead of the drainage being imperfect, we should say it is too plentiful, and the soil must be very loose, or it has parted from the sides of the pots. Loosen the surface, so as to fill up the cracks, and apply a top-dressing, ramming it firm, then water thoroughly.

BEGONIA CULTURE (H. A. L.).—You do not say what kinds you grow. Begonias are divided into those cultivated for their leaves, and those grown for their flowers. We think yours are of the latter description, in which case you will best succeed by propagating them by cuttings of the points of the shoots taken off 3 or 4 inches long, and inserted round the sides of a pot in a compost of light loam, leaf soil, and sandy peat, with the addition of one-fourth of silver sand. Cut the shoots over below the lowest joint, remove the leaves halfway up the cutting, and insert it at that depth in the soil. Place the pot in a gentle hotbed of 75°, and keep it close and shaded until well rooted; then the cuttings should be potted-off singly, and be returned to the hotbed until established, when they may be removed to a warm greenhouse or cool stove. If you wish to propagate the Begonias which are grown for their leaves, you may take a leaf and peg it on the surface of a pot or pan filled with the compost previously recommended, and place it in a frame or hotbed kept close, moist, and shaded, and young plants will be formed along the midrib of the leaf. These may, when large enough, be taken up and potted separately in small pots, returned to the hotbed, and when established removed to a cool stove or warm greenhouse, shifting them into larger pots as required. To succeed well, Begonias require a winter temperature of 45° to 50°; they will thrive in a greenhouse in summer, but much depends on the kinds grown. The most likely cause of your not securing seed is the want of heat, and the atmosphere needs to be kept drier than for growing plants.

AMARYLLIS SEED SOWING (Amaryllis).—Sow the seeds at once in rich loamy soil, with a half part each of sandy peat, leaf soil, and silver sand. Cover them about an eighth of an inch deep with fine soil, and place them in a house with a heat of 65° to 70° at night, and plenty of moisture. Pot the plants when large enough to handle, and grow them for the first two or three years without drying them off. They will grow the stronger and flower sooner if afforded a good bottom heat.

KIDNEY BEAN FLOWERS FALLING (A Subscriber).—It is usual for the flowers to fall as soon as the pod begins to swell; but we suppose it is of the pods not swelling that you complain. This we should attribute to the cold and wet of the present season. With finer weather we think they will swell well.

ASPARAGUS SHOOTS (P.).—The reason Asparagus shoots are allowed to grow is to provide for a good supply of heads or shoots the following spring, for on the development of the spray this year depends that of the buds at the crown, which give rise to the shoots or heads the following year; therefore, it is not possible to encourage the growth of the shoots too much after cutting the heads, which should be discontinued after June. The beds cannot have too frequent soakings of liquid manure from that time to the middle of September. We find that without a strong growth large heads of this delicious vegetable cannot be expected.

WINTER GREENS BLIND (Idem).—We cannot account for the prevalence of blindness this year in plants of Cabbage, Broccoli, Cauliflower, Savoy, and other winter Greens. We think it arises from some imperfection of the seed, and we are confirmed in this opinion from the circumstance that plants exhibiting this abnormal condition do so in a young state, and seldom start any shoot below the place where the growing point appears destroyed. It is very common this year, but we have not suffered to any great extent, not having one plant in a hundred so affected.

LADY DOWNE'S GRAPES SCALDED (B. G.).—We do not think the border has anything to do with it. This Grape is very liable to scald and spot just before the berries change colour. Throw all the ventilators wide open by day, and do not shut the house up too early or close at night; this will prevent it.

HEATING VINERY, &c. (Inquirer).—Your present piping will not keep up a temperature of 55° in severe weather in winter. You will want at least three of such pipes (2½-inch) instead of two. Having the pipes there it would hardly be worth while having a flue, as there is so little room for a stove-hole. As much of the earth taken out on the coldest side—that from the earth-platform as would enable you to place a stove there (iron with a flat head for an evaporating-pan)—would do all you want with an occasional help from the pipes, when you must use your boiler to keep the frost from the vinery. This stove could be fed most easily from the pathway inside; but it would give least trouble if fed from the outside, the furnace-doors being a little inside of the perpendicular of the side wall. In either case a small chimney—say 4 inches in diameter—furnished with a cap, must go through the roof. You may avoid all this by placing a stove-valve in the flow-pipe that enters the vinery, and behind that, nearer the boiler, fix a 1 or 1½-inch pipe to

go right on through the vinery, and connect at once with the flow-pipe in the span-roofed house. This small pipe will not affect the vinery much. We thus take a 1-inch pipe directly from a boiler and heat a house separately some 70 feet from the boiler without having more heat in the intermediate houses than is given off by the 1-inch pipe.

COVERING VINE BORDER (T. C. W.).—If your Vines are forced early—that is, to have ripe Grapes in May or the beginning of June—the border should have some covering to throw off the rains. You may utilise the spare lights you have for this purpose. Strawberries in pots may be kept under them, and would not damage the Vines.

HOT-WATER PIPES IN GREENHOUSE (J.).—Cinerarias and Calceolarias would be the most likely plants to be damaged by being placed near hot-water pipes; but we do not think they will be injured on yours, as your stage is of slate, and you have a layer of sand between them as well.

POTTING SOIL (Z. I.).—Is the peat soil you have from an upland heath, or is it from a marsh, such as is used for fuel? If it is the former, the material is useful in moderation for most plants—in good quantity for all hair-rooted plants, as Heaths, Azaleas, &c. The latter is better kept out of all composts. There is no general rule for compost. For Heaths we would use fully three-fourths of heath soil, the other fourth equal parts of silver sand and charcoal, with a few bits of sweet turf mingled to give consistence. For such plants as Pelargoniums we would use three parts of your best sod loam, one of silver sand, one of leaf mould, one of peat, of the proper description, and one of small charcoal. If you mix all together and allow the mixture to lie in a dry place it will do very well. On the whole we prefer mixing the soil as we want it, and then we can make many little differences to suit different plants. For instance, we should never give such a rich compost to Pelargoniums as we would give to Chrysanthemums and Salvias. A little lime mixed with your compost, if you allow it to lie some weeks previous to use, will destroy the worms that are alive. We do not like to mix lime with compost for tender things when the compost is to be used directly. The heat would be too much for some roots. When mixed some weeks the lime is changed into simple chalk, and unless for plants which dislike chalk and lime in all forms, as Rhododendrons, it would do no harm in the mild chalk state. The chief evil of worms is, that they unsettle the roots and clog the drainage.

HEATING A PIT (Idem).—In heating such a little pit by gas you would need from 48 to 60 feet of 2-inch piping, and for such work we should prefer copper or zinc to metal. All such heating is expensive. If gas must be used, we would prefer a gas stove with an argand burner, close on the top, but with a pipe through to take off the burnt gas into the open air. As to piping, you will want two 1½ to 2-inch pipes all round. The plants, if not too close to the pipes, would not be injured. If a slip of wood, say from a quarter to half an inch thick, ran along by the side of them there would be no danger.

SUBSOIL (E. M. Rathgar).—It is clayey, and would improve the surface soil if this is light. Any manure of animal and vegetable origin may be applied, and bricklayers' limy rubbish, after the brick fragments had been taken out from it.

GREEN ROSE (A. R.).—The specimen sent was not the "viridiflora."

BOILER HEATING TWO HOUSES (Aphelandra).—If you can place a valve in the flow-pipe leading to each separate house, you can heat your houses separately or together; but whenever you put a fire on you must be sure that one of your valves is open. You need not trouble with the return-pipes if, as we suspect, each house has its separate return.

KIDNEY BEANS ON CHRISTMAS DAY (G. M. B.).—To obtain these you must sow on the 1st of November, or earlier if you cannot afford a temperature of 60° at night, and from 60° to 70° during the day.

JOINTS OF HOT-WATER PIPES (W. M.).—Unless the sockets are made with the elastic bands so constantly advertised, there is some trouble in getting the common pipes taken to pieces again, when done with rope-yarn and red lead as yours. Putting a brazier below the joints expands them, and the stuffing material is more easily taken out. When the joints are put in with yarn and then filled with Portland cement, a little fire heat applied will cause the cement to crack, and it is punched-out easily.

ANTS (E. Pratt).—You can expel the "emmetts" by daily sprinkling guano or pouring ammoniacal liquor from the gasworks, over their haunts until they disappear.

INSECTS (I. S.).—The "insect or reptile" was completely smashed, and glued the papers together.

NAMES OF PLANTS (W. S.).—*Panicum sulcatum*. (*Boveran*).—We cannot name plants from such withered unfowered specimens. (*B. Smyth*).—The shrub is *Rhus Cotinus*, the Venetian Sumach. (*T. L. K.*).—We cannot name the varieties of florists' plants. They are too numerous and too nearly alike. (*A. C.*).—A *Thunbergia* or something like it. (*Rockrose*).—Apparently some *Caprifoliaceae* shrub, near the Honeysuckles, but specimen too imperfect. (*W. D.*).—*Crataegus pyracantha*. Any pruning must be very judiciously administered. (*W. H. M.*).—1, *Athyrium Filix-femina*; 2, *Polystichum angulare*. (*Downie*).—1, *Solidago Virgaurea*; 2, *Melampyrum pratense*; 3, *Torilis infesta*. (*Julia*).—*Arum maculatum*. (*J. R.*).—Probably *Funkia subcordata variegata*; but half a leaf is insufficient to determine.

POULTRY, BEE, AND PIGEON CHRONICLE.

WATER FOR POULTRY.

THAT a supply of water in poultry runs is unfavourable to egg-laying in the common fowl is what "J. F. P." states in this Journal on the 1st inst., and in support he relates that in two runs of poultry of twenty-four birds each, nearly allied in age and breed, and, I suppose, similarly fed with the exception that one run has a supply of water and the other has none, the run of birds supplied with water furnishes fewer eggs than the run which has none. On this question theory must be silent in the presence of experience. However, such a state of matters is caused either by a defective supply of food in quantity or quality; or by functional inactivity. A supply of water to healthy fowls is in every sense of the word beneficial, and of incalculable importance in promoting nutrition and a salutary condition of the

animal economy. Besides the fact that three-fourths of the animal body is composed of water, the law of endosmosis is almost controlled by the solution of food by fluid, and instead of tending to obstruct digestion water is an indispensable element in carrying on digestion. The natural craving for fluid after meals is because it is required to effect the solution of the food, and the dilution of the digested portions directly favours its assimilation into the blood. Water is universally present, and without it no organisation could take place, and no animal body exist. It is found in all the tissues and fluids of the body.

So if "J. F. P." would introduce into his run supplied with water two dozen strong healthy birds not more than three years old (as after that age they fall off laying, and by four years old they are only fit for stewing for the table), and if these hens are properly attended, warmly housed, and have a variety of food, never neglecting to give bone dust, oyster shells, lime, and ashes, with grass laid down here and there in the run, he will then be satisfied that the water is not the cause of the reduced egg-production.—JAMES BRUCE, *Veterinary Surgeon, New Deer, Aberdeenshire.*

LIGHT BRAHMAS.

MR. SECOCMBE says that I made a statement in the presence of a committeeman and himself before the awards were known, that Young Sampson was there, &c. In reply I say there was no committee. I made no statement whatever, and moreover I did not enter the show until after the awards had been made; and much to my astonishment the judges had then gone by train. As I stated in my last, the above bird has not been in competition for twelve months or more, and consequently was not at Plymouth, nor, indeed, at Exeter. Though I am compelled to say this a second time, as Mr. Seccombe insinuates that I wrote what was not true, I can bring a dozen witnesses to prove what I say.—JAMES LONG.

P.S.—It is true that I did claim Young Sampson, although but for my faith in size I should have exhibited him myself.

[The above extract is all that we can publish; and we must decline inserting any more on the subject.—EDS.]

CLEVELAND AGRICULTURAL SOCIETY'S POULTRY SHOW.

THIS was held at Redcar on the 1st inst. The following is the prize-list:—

SPANISH.—*Black*.—1, Pickering & Dugdaley, Driffield. 2, T. Robson, Bishop Auckland. *hc*, G. Holmes, Great Driffield.
DORINGS.—1, J. White, Warlaby. 2, W. Bearpark, Ainderby Steeple.
COCHIN-CHINA.—*Buff or Cinnamon*.—1, G. Holmes. 2, D. Ibeston, Whitby. *Any other Colour*.—1, Rev. R. L. Storey, Wensley, Bedale (Partridge). 2, H. Crabtree, Levensholme, Manchester.
BRAHMA POOTRA.—1, E. Moore, East Rainton, Fence Houses. 2, R. M. Staveley, Ripon. *hc*, Rev. E. A. White, Whitby. *c*, Lady Bolton, Bolton Hall, Bedale.
GAME.—*Reds*.—1, T. Robson. 2, J. Watson, Knaresborough. *Any other Variety*.—1, O. A. Young, Driffield. 2, G. Holmes (Duckwing). *c*, J. Robson, Bishop Auckland (Duckwing). *Cock*.—1, O. A. Young. 2, T. Weatherell, Whitby.
BANTAMS.—*Game*.—1, T. Robson. 2, J. Torbeck, Middlesbrough. *c*, E. Barker, Stokesley. *Any other Variety*.—1, F. Powell, Knaresborough (Golden-laced). 2, G. Holmes. *c*, O. A. Young.
HAMBURGS.—*Golden-pencilled*.—1, R. Moore. 2, G. Holmes. *Silver-pencilled*.—1, G. Holmes. 2, W. Bearpark. *Golden-spangled*.—1, G. Holmes. 2, W. Bearpark. *Silver-spangled*.—1, Ashton & Booth, Broadbottom, Mottram. 2, Pickering & Dugdaley. *c*, G. Holmes; W. Bearpark; W. Dickinson, Lythe, Whitby.
POLISH.—1, C. E. Morgan, Bishop Auckland. 2, W. Bearpark. *c*, J. T. Proud, Bishop Auckland.
ANY OTHER VARIETY.—1, Miss Barclay, Aske, Richmond (Crève-Cœur). 2, R. Moore. *c*, Rev. J. G. Milner, Bellerby, Leyburn. *Any Variety of Cross for the use of the spit*.—1, T. P. Carver, Langthorpe, Boroughbridge. 2, J. Gales, Kirby, Northallerton.
DUCKS.—*Aylesbury*.—1, T. P. Carver. 2 and *hc*, O. A. Young. *c*, W. Stonehouse, Whitby. *Rouen*.—1, R. M. Staveley. 2, G. Sadler, Boroughbridge. *Any Variety*.—1 and *c*, W. Binns, Pudsey. 2, O. A. Young. *hc*, Rev. J. G. Milner (2); G. Sadler.
GESE.—1, Miss Walton, Acklam, Middlesbrough. 2, O. A. Young.
RABBITS.—*Lop-eared*.—1 and 2, A. H. Easton. *Any Fancy Breeds*.—1, H. Wilson, Great Aytton (Himalayas). 2, S. W. Boyes, Seamer, Yarm (White Angolas).

JUDGES.—Mr. S. Burn, Whitby, and Mr. W. Cannan, Bradford.

[We publish the foregoing list of prizes only because from judges and exhibitors we have received letters complaining that by withholding it they are injured; and one adds, "Societies whose shows are not reported in your columns are also injured, for many exhibitors are influenced by such reports being published. Committees should consider the expense you incur."—EDS.]

HETTON COLLIERIES POULTRY SHOW.

THIS Show was held on the 14th inst. in the splendid park at Hetton Hall; and the beautiful gardens and grounds adjacent, through the kindness of Lindsey Wood, Esq., were also thrown open to all visitors to the Show. Of poultry there were 160 pens, and the birds while in the hands of the Committee were well attended to. Of *Spanish* the adult birds were of fair quality, but the chickens too young for the show pen. *Dorkings* were

large and good in colour, and sound-footed in both classes; but the cream of the adult classes were the *Buff Cochins*, several of which (those in the first-prize pen) being near perfection. *Brahmas* in both classes were but poor; but in all classes of *Hamburghs* there were some capital birds, notably the first-prize *Gold-pencilled*, and the *Silver-spangled* and the *Silver-pencilled* in young birds. In adult *Game Brown Reds* of good quality were first, and *Black Reds* second; and in chickens this order was reversed, and the first-prize cockerel was a very promising bird. *Polands*—*Silvers* first and *Golden* second, both pens being very good in crest and marking. In *Game Bantams* only the first-prize pair were noteworthy, but there were good *Blacks* in the *Variety* class; and in *Ducks* the *Aylesbury* were correct in bill, but the *Rouens* were very faulty in that respect.

Of *Pigeons* there was but a moderate show, the amount offered not being such as to induce much competition. The *Pouters*, *Turbits*, *Dragoons*, and the *Frillbacks* in the *Variety* class were among those worthy of notice.

SPANISH.—1, W. Atkinson. 2, H. Dale.
DORINGS.—*Coloured*.—1, W. Bearpark. 2, Buglass & Williamson.
COCHIN-CHINA.—1 and 2, G. H. Proctor.
BRAHMA POOTRA.—1 and 2, R. Moor.
HAMBURGS.—*Silver-pencilled*.—1, W. Whitfield. 2, W. Bearpark. *Golden-pencilled*.—1, W. Bearpark. 2, W. Whitfield. *Silver-spangled*.—1, W. Whitfield. 2, W. Bearpark. *Golden-spangled*.—1, W. Whitfield. 2, W. Bearpark.
POLANDS.—1, W. Bearpark. 2, C. E. Morgan.
GAME.—*Black-breasted and other Reds*.—1, T. Robson. 2, Buglass & Williamson. *Any other Variety*.—1, W. Whitfield. 2, Buglass & Williamson.
GAME BANTAMS.—*Black-breasted and other Reds*.—1, W. Atkinson. 2, D. Hunter. *Duckwing and other Greys*.—1, H. Mulley. 2, W. Whitfield. *Any Variety*.—1, H. Mulley. 2, W. Atkinson.
ANY OTHER VARIETY.—1, W. Bearpark. 2, R. Moore.
DUCKS.—*Aylesbury*.—1, C. E. Morgan. 2, W. Laing. *Rouen*.—1, T. Roddam. 2, J. Miller.

COCKEREL AND PULLET OF 1872.

SPANISH.—1, H. Dale. 2, W. Laing.
DORINGS.—*Coloured*.—1 and 2, Mrs. Clark.
COCHIN-CHINA.—1, G. H. Proctor. 2, T. H. Readman.
BRAHMA POOTRA.—1, C. E. Morgan. 2, R. Moor.
HAMBURGS.—*Silver-pencilled*.—1, T. H. Readman. 2, N. H. Scott. *Golden-pencilled*.—1, W. Atkinson. 2, T. H. Readman. *Silver-spangled*.—1, T. H. Readman. 2, R. Moor. *Golden-laced*.—1 and 2, R. Moor.
POLANDS.—1, C. E. Morgan. 2, J. Robson.
GAME.—*Black-breasted and other Reds*.—1, Buglass & Williamson. *Any other Variety*.—1 and 2, W. Laing.
EXTRA.—*Game Bantam Chickens*.—1, J. Harrop.

PIGEONS.—*Carriers*.—1, J. Guthrie. *Pouters*.—1, G. Robinson. 2, R. Wilson. *Tumblers*.—1, J. Guthrie. 2, R. Wilson. *Owls*.—1, T. W. Kilburn. 2, R. Wilson. *Trumpeters*.—1 and 2, R. Wilson. *Barbs*.—1, G. Robinson. 2, R. Wilson. *Turbits*.—1, R. Wilson. 2, W. Bearpark. *Jacobins*.—1, R. Wilson. *Dragoons*.—1, N. H. Scott. 2, R. Wilson. *Any other variety*.—1, T. W. Kilburn. 2, R. Wilson.

RABBITS.—*Lop-eared*.—1, W. Whitfield. 2, T. Roddam. *Common Breed*.—1 and 2, I. Palmer.

The Judge was Mr. Hutton, Pudsey.

BAWTRY POULTRY SHOW.

THIS was held on the 15th inst. The following is the prize list:—

DORINGS.—1, W. H. Harvey, Sheffield.
SPANISH.—1, W. H. Harvey.
BRAHMAS.—1, W. H. Harvey. 2, G. Green, Gainsborough.
GAME.—1, C. Challoner, Whitwell, Chesterfield. 2, J. Woods, Scofton, Work-sop. *hc*, C. Challoner; J. Woods.
HAMBURGS.—1, G. Green. 2, C. Gray, Bawtry.
BANTAMS.—1, C. Challoner. 2, W. H. Harvey. *hc*, W. G. Waters; J. Bingham, Tickhill.
ANY OTHER VARIETY.—1, W. H. Harvey. 2, W. G. Waters, Elsham, Briggs. *hc*, Mrs. Postlethwaite, Bawtry.
SELLING CLASS.—1, C. Challoner, Whitwell. 2, W. H. Harvey.
DUCKS.—1, C. Challoner.
PIGEONS.—*Carriers*.—1, W. H. Harvey. 2, J. E. Crofts. *Pouters*.—1, W. H. Harvey. 2, W. Delaney, jun., Doncaster. *Tumblers*.—1, W. H. Harvey. 2, J. E. Crofts. *Fantails*.—1, W. G. Waters. 2, J. F. Loversidge, Newark. *Magpies*.—1 and 2, J. E. Crofts. *Jacobins*.—1, W. H. Harvey. 2, J. Marsden. *Turbits*.—1, W. H. Harvey. *Any other Variety*.—1, W. H. Harvey. 2, Miss A. H. Kitching, Bawtry. *Selling Class*.—1, J. E. Crofts. 2, W. H. Harvey.
CAGE BIRDS.—*Canary*.—*Yellow*.—1, R. Richardson. *Buff*.—1, F. Downe. *Bawtry Goldfinch*.—1, J. Middleton.

ALDBOROUGH AND BOROUGHBRIDGE POULTRY SHOW.

THE twelfth annual Exhibition was held at Boroughbridge on the 16th inst., on a spot well chosen for the purpose. The pens, which were uniform in shape, were well arranged, and everything the Committee had done gave promise of excellent returns, but the rain defeated them.

This was undoubtedly the best show of poultry ever held at Boroughbridge, the *Dorkings* being as good a class as has been seen of late; but the adult *Spanish* were not of high quality. Young *Spanish* were very forward and very good in face. *Game* of both classes were poor, but the one pen of adult *Buff Cochins* were good in all respects. The adult *Hamburghs* comprised some good birds, but in point of quality the young classes were a failure. *Game Bantams* were but moderate. The *Black* and *Golden Sebrights* were very good. The *Variety* class contained some good birds, the first being *Crève-Cœur* and the second *Black Hamburghs*.

Some of the best classes in the Show were the *Geese*, *Turkeys*, and *Guinea fowls*. Few better *Rouen Ducks* could be found.

In the *Pigeon* classes the entries were small, but some good birds were shown.

In *Rabbits* the competition was close; and in Lop-eared bucks the first was a very young fawn, ears 20 inches by $4\frac{1}{2}$, and the second of the same colour, though much larger and older, $19\frac{1}{2}$ by $4\frac{1}{2}$. The does were larger and broader in ear than the bucks.

DORKINGS.—1, W. Bearpark, Ainderby Steeple. 2, H. R. Farrar, Greenham merton Hall. *hc*, Miss Barclay, Upleatham Hall; T. P. Carver, Langthorpe. *Cockerel and Pullet*.—W. & F. Pickard, Thorne. *c*, H. S. Thompson, Kirby Hall. *hc*, T. P. Carver.

SPANISH.—1, Pickering & Duggleby, Driffield. 2, W. & F. Pickard. *hc*, H. Dale, Northallerton; W. & F. Pickard. *Cockerel and Pullet*.—1 and 2, W. & F. Pickard. *hc*, T. P. Carver.

GAME.—1 and *hc*, J. Watson, jun., Knaresborough. 2, W. Bearpark. *Cockerel and Pullet*.—1, Miss Barclay. 2, J. Bell, Thornton-le-Moor, Northallerton. *hc*, J. Robshaw, Whitley; T. Mason, Whitley.

COCHIN-CHINA.—1, T. S. Turner. *Cockerel and Pullet*.—1, H. R. Farrar. *hc*, T. P. Carver. 2, H. S. Thompson. *Cockerel and Pullet*.—1 and *hc*, T. P. Carver. 2, H. S. Thompson.

HAMBURGHS.—*Golden-spangled*.—1 and 2, W. Bearpark. *HAMBURGHS*.—*Golden-pencilled*.—1, W. Bearpark. 2, Pennington & Kidson, Thirk. *hc*, P. Gill, Boroughbridge. *Cockerel and Pullet*.—1, Miss E. M. Ellerby, Easingwold. 2, Pennington & Kidson.

HAMBURGHS.—*Silver-spangled*.—1, Pickering & Duggleby. 2, W. Bearpark. *Cockerel and Pullet*.—1, G. Huby, Newton-on-Ouse. 2, J. Robshaw. *hc*, T. P. Carver.

HAMBURGHS.—*Silver-pencilled*.—1, W. Bearpark. 2, Pickering & Duggleby. *Cockerel and Pullet*.—1, W. Croft, Killinghall. 2, J. Clayton, Thirk. *hc*, T. P. Carver.

POLAND.—1, W. Bearpark. 2, T. S. Turner. *Cockerel and Pullet*.—1 and 2, T. S. Turner.

BANTAMS.—*Game*.—1, T. P. Carver. 2, H. Dale. *hc*, H. S. Thompson; J. Graves, Knaresborough. *Pickering & Duggleby*.

BANTAMS.—*Any other Variety*.—1, E. R. Turner, Boroughbridge. 2, F. Powell, Knaresborough. *hc*, Mrs. Croft, Aldborough Hall; J. Watson, Knaresborough. *Farmyard Cross*.—1, H. S. Thompson. 2, R. Potter, Whitley. *hc*, Miss Woodward, Minskip; W. P. Garret, Low Dunstorth. *Cockerel and Pullet*.—1, T. P. Carver. 2, Miss Woodward.

ANY OTHER VARIETY.—1, Miss Barclay. 2, W. Bearpark. *hc*, H. R. Farrar (Houdans); J. Best, Boroughbridge (Crève-Cœur).

TURKEYS.—1, J. Braithwaite, Otterington House. 2, I. Moorey, Malwith, Skelton, Ripon. *Poult*.—1, Mrs. Mangles, Givendale. 2 and *hc*, I. Moorey.

GEES.—1, Mrs. J. Smith, Humberton. 2, J. T. Renton, Ox Close, Ripon. *hc*, C. W. Clarke, Minskip. *Goslings*.—1, Mrs. J. Smith. 2, J. T. Renton. *hc*, I. Moorey.

DUCKS.—*Aylesbury*.—1 and 2, T. P. Carver. *hc*, H. S. Thompson. *Ducklings*.—1 and 2, H. S. Thompson. *hc*, H. R. Farrar; Mrs. Taylor, Langthorpe House. *Ducks*.—*Rouen*.—1 and 2, Mrs. J. Daglish, Aldborough. *Ducklings*.—1, Mrs. J. Daglish. 2, W. Fogg, Ripon. *Any other variety*.—1, G. Sadler.

GUINEA FOWLS.—1, J. T. Renton. 2, I. Moorey. *SELLING CLASS*.—1 and 2, T. P. Carver. *hc*, Mrs. Taylor; J. Watson, Knaresborough; W. & F. Pickard (2); J. Clayton.

EXTRA STOCK.—1, Cook & J. King, Boroughbridge (Peacock). *hc*, G. Moisley, Langthorpe (Parrot); Moorey, Mulwith (Turkey and Guinea Fowls).

PIGEONS.

POUTERS.—1 and 2, G. Sadler. **CARRIERS**.—1 and 2, G. Sadler. **TRUMPETERS**.—1 and 2, W. Croft, Killinghall.

JACOBINS.—1, A. J. Sellers, Norton, Malton. 2, W. Croft. **FANTAILS**.—1, W. Bearpark. 2, J. Watson, jun.

TUMBLERS.—1, G. Sadler. 2, E. Wrighton, Minskip. **NUNS**.—1 and 2, W. Croft. *hc*, A. J. Sellers.

TURBINS.—1, W. Croft. 2, A. J. Sellers. *hc*, W. Croft; W. Bearpark. **ANTWERPS**.—1, G. Sadler. 2, T. Horman, jun., Ripon.

OWLS (English).—1, A. J. Sellers. 2, G. Sadler. **ANY OTHER VARIETY**.—1, W. Bearpark. 2, A. J. Sellers (Swallows). *hc*, W. Croft.

SELLING CLASS.—1, G. Sadler. 2, W. & F. Pickard. *hc*, T. P. Carver; W. Scott, Broom Close.

RABBITS.—*Buck*.—1, W. Turner, Boroughbridge (Fawn). 2, W. B. Boden, West Hartlepool. *hc*, G. Umpleby; H. Cawood, Thorne, Doncaster. *Doe*.—1, Rich, Helperby. 2, W. B. Boden. *hc*, W. Bearpark.

JUDGE.—Mr. E. Hutton, Pudsey.

DISEASES OF CANARIES.

[The following will give the information asked for by several correspondents.]

The mortality which waits on Canaries from the moment they leave the shell, and even before they leave it, and which follows them so closely through life, but specially during the first few weeks of their existence, is one of the greatest causes of anxiety to the breeder. Under the cheering and encouraging influences of early spring, when animal and vegetable existence alike seem to be rousing from the sleep of winter, and making active preparation for the business of the year, when everything is anxious for a fresh start in the race for life, and the chills and disappointments of bygone days are forgotten in hopeful anticipations of the future, it is not to be wondered at that the oft-repeated occupation of castle-building and counting one's chickens before they are hatched should be indulged in, despite our experience of the fallacy of such a mode of procedure. When the breeder retires to his *sanctum sanctorum*, and seated on the orthodox chair—an inverted show cage—views his score or more pairs of strong healthy birds, all busily engaged in setting their houses in order, is it to be wondered at that he casts an eye to his large empty flight cages, and pictures to himself the not far-distant time when he may expect to see them filled? and as he watches the smoke from his post-prandial pipe curling gracefully upwards, can he be blamed if he indulges in a dream of something hazy and indistinct looming in the future, assuming the shape of freshly-moulded young birds, making his name famous, and rewarding him for months of patient care and attention to his well-selected stock? This is the view of matters in March or April, but August sees the flight cages almost empty, and disappointment written over everything.

How to account for it is the question. His twenty hens have

laid upon a moderate calculation upwards of three hundred eggs. A reasonable per-centage have been empty, a few young birds have died in the shell, but the remainder have been duly ushered into existence fine, healthy, lusty little "raw gobbies," who were never tired of stretching their long necks and opening wide their red mouths to beg for food. Of these a large proportion never received a bite, but continued to beg most piteously till too weak even to raise their little heads in a mute appeal to their apparently unnatural mother. Perhaps paterfamilias, when he occasionally found the hen off the nest, would give them a mouthful on the sly, and it may be that the anxious breeder himself went the round of his cages as often as opportunity permitted, doing what he could with a bit of stick and a little moistened yolk of hard-boiled egg, screwing up his mouth, and manufacturing most affectionate and enticing little squeaks to induce some half-starved morsel of skin and bone to consent to be fed. But it was only to put off the evil day. The end of such neglected nests must come, and come it does.

Another portion would go on famously for five or six days, both parents being most assiduous in their attention, but at the end of that time nest after nest of young ones as fat as moles would die from no neglect of their parents, but apparently killed by kindness. From six days to a fortnight old no young bird seemed free from the attack of some insidious enemy, and only a very few ultimately found their way into the roomy flight prepared with such careful hands in the early spring.

Once there and able to shift for themselves surely all danger is past! But no, they still die, and anxious inquirers write to know the reason why, and to ask is it possible to avert the fate of these last, the small results of a season's breeding. I can only say what I do myself. When I find a young bird mopes and sits with his head under his wing, and his feathers turned the wrong way, I blow the feathers from the breast. So long as that remains plump and round I leave Nature to work out her own cure; but if the breast bone begins to show a sharp edge, and there is a falling away of flesh, I discharge the contents of the bowels by giving two or three good drops of castor oil, which operates quickly, and in the majority of instances the sick birds recover. As a precautionary measure give as little soft food as possible, but grind or crush some white seed, and make them eat that or nothing.—W. A. BLAKSTON.

BEE SEASON NEAR DERBY.

I WILL make a few extracts from my journal. Our apiary faces south-south-east—a verandah with a glass roof and open front well sheltered. The hives we use are flat-topped straw ones, known as Payne's cottage hives, with straw supers of various sizes.

No. 1. A swarm of June 10th, 1871. The first swarm issued June 15th, 1872; the second swarm June 24th, 1872. I returned it the same evening. I took a cap on August 7th; weight 13½ lbs.

No. 2. A swarm of June 7th, 1872, adding a weaker swarm June 15th, 1872. A cap taken August 7th; weight 16 lbs.

No. 3. A swarm of May 24th, 1871. The first swarm issued June 7th, 1872. The second swarm issued from it June 21st. I returned it the same evening. A cap was taken July 3rd, 1872; weight 13 lbs. A second cap was taken August 7th, 1872; weight 11 lbs.

No. 4. A swarm of June 2nd, 1869. First swarm issued from it June 17th. A cap was taken August 7th, 1872; weight 16 lbs.

No. 5. A swarm of June 19th, 1872. A glass was taken August 6th, 1872; weight 3½ lbs.

No. 6. A swarm of June 2nd, 1871. The first swarm issued June 15th, 1872. The second swarm issued June 27th, 1872. I returned it the same evening. A cap was taken August 7th, 1872; 17½ lbs.

No. 7. A swarm of June 17th, 1872. A weak swarm was added the following night. A cap was taken August 6th, 1872; weight 17½ lbs.

The store hives average 20 lbs. nett weight. I may add that it is contrary to our general practice to allow the bees to swarm, but this season from some cause we have been unable to prevent their doing so, although our hives are well protected from the sun by loose-fitting circular wooden boxes.—JOHN CAMPBELL, Gardener to C. E. Newton, Esq., Mickleover Manor, near Derby.

THE WOODBURY HIVE.

We purchased one in 1869, into which a swarm, weighing 4½ lbs., was hived on June 2nd, adding another swarm of 3½ lbs. weight on the 10th of the same month. We took away a comb of 4 lbs. weight on July 23rd. When weighed in September the hive was 22 lbs. nett. 1870—A swarm was added early in June, with no more favourable results than in the previous year. 1871—We added a swarm at the end of May, and the following day gave the hive the glass box or super, which, by the second week in July, was more than half filled. On examination a week later, the bees had carried down the greater portion of the honey into

the stock box. 1872—a swarm was united to the hive on June 17th, and a large glass, 12 inches in diameter, was added the next day. A swarm came forth on the 29th of the same month, which was returned to the stock in the evening, but I believe the cunning old queen took refuge in the super, and took her second trip on the 3rd of July. We then hived her and her followers in a separate hive. But little work has been done in the glass; so now, as we despair of doing any good with the Woodbury hive, we think of driving the bees into a Payne's cottage hive, which is our favourite. Will you give us your opinion?—A CONSTANT READER.

[In the first place we cannot understand why your hive should have required the addition of a swarm every season after the first, in 1869. You should not have taken away the comb from the stock box in that first year. The year 1871 was so generally bad, that we do not much wonder at your failing to obtain any tangible results; but during the present season you ought to have done better, as we know of very fine supers having been obtained from these hives, in some instances, in addition to their having previously afforded strong artificial swarms, or numerous sealed and other brood combs removed for that purpose. We would advise you not to discard the hive from your apiary. Procure, if you have it not, our "Bee Manual," and try again. See our reply to "AN INQUIRER." Feed liberally in autumn if required; and again in smaller quantities, but continued during a longer period, in the following March and April. This will conduce to early breeding, and you will not be likely to have to add a fresh swarm every summer. We shall be pleased to help you further if you desire any additional advice.—EDS.]

SILKWORMS.

I HAD in the beginning of the year some silkworms' eggs laid by last year's moths. They in due time were hatched out, and went through the usual courses; the worms being fed on lettuce leaves, mulberry leaves, and now and then, but seldom, oak leaves. The silk was all wound off the cocoons, and the new eggs laid about a month ago. On Tuesday, August 13th, five or six silkworms were hatched from the eggs of this year, and are now growing fast and doing well. The weather has not been hot lately, and the eggs have been in a room with a northern aspect. I should be glad to know if any of your correspondents have had a similar occurrence in this or in previous years.—VERMIS.

OUR LETTER BOX.

WATERY TUMOURS ON COCHIN-CHINAS (*Constant Reader*).—It is generally the result of inflammation. The water is contained in a "sac" which adheres to the breast bone. There is no cure but letting the water out, and using every possible means to lessen the size of the sac. Some strap it up with adhesive plaster, others use the strongest astringents they can get.

JUNGLE FOWL (*Jack*).—The Jungle Fowls of whatever variety should be shown in the various class. They are distinguishable from the Black Red Bantams by their singular comb, their peculiar legs, their solitary gill, their rich colours, and "the star of light" at the extremity of the hackle and saddle feathers. Their carriage is different from other breeds; the tail is carried drooping, and among the true-bred birds their wildness makes them the hyenas of the poultry yard. Nothing tames them, and in India when they want to move them they sew the upper and lower lids of the eyes together with horsehair.

LIGHT BRAHMS (*J. W.*).—We cannot answer your question about the plates in Mr. Wright's "Poultry Book." The Light Brahma should have pea-combs, yellow legs very well feathered, but not even the suspicion of a vulture hock; white plumage save the flight and tail feathers, which should be black, and the hackles should be accurately striped with black.

PRECOCIOUS SPANISH PULLETS (*T. A. Y.*).—It is unusually early for a Spanish pullet to lay when five and a half months old. Eggs may be looked for any time after seven months, but we do not expect them before. It has been a very bad hatching time for everything, but we have never a better rearing than this year. A little camphor in the water will always prevent "gapes."

CONTINUANCE OF COCK'S INFLUENCE (*E. H. B.*).—Much depends on the time of year. As a rule, a month or at least three weeks should elapse, but it is a disputed point. In the winter when a hen is not laying a *mésalliance* is often unimportant, but not so in the spring or summer. Our own chickens are running together now. They will be separated the end of October, and we shall depend on their eggs in December. Two years since a pullet running at large and receiving everybody's attentions stole her nest. The produce distinctly showed five breeds.

IMPERFECT HOUDAN (*Subscriber*).—Both are serious defects in birds intended for exhibition, but we should infinitely prefer the swollen toe to the crooked leg.

EGGS OF WHITE BANTAMS (*Long Subscriber*).—Either white or yellow legs will do, and the colour is immaterial, but the yellow is most attractive. It is not, however, an indication of greater purity. Being rose-combed they are not Game Bantams, but would show among the Whites, and there is more latitude in that class than there would be in the Game.

GOLDEN-PENCILLED HAMBURGHS (*Old Reader*).—We should not breed from the hen from whose back the feather was taken. If it be a fair specimen of the plumage, it must be "mossy." The pencillings on the feather, instead of being sharp-cut, are indistinct, and the colours are blended. A feather taken from such a hen as we should like to breed from, should have a rich, brown, golden ground colour, marked by five clean-cut, sharp, dark stripes. The approach to mossiness in the feather you send should not be tolerated in a stock bird if good progeny are looked for.

PIGEONS IN A POULTRY HOUSE (*Minorca*).—We believe you can keep your Pigeons and your fowls in your house without injury to either. You must, however, avoid the dung fluff and feathers. Either over the door or in

some accessible place let there be made a small enclosure or box with pigeon-holes outside for access. It must be entirely closed all round. You must put some pans in it for the birds to nest in, and it must be cleaned out whenever possible. After it is cleaned as well as can be with hoe and brush, it should be thoroughly washed out with carbolic soap. We would much rather have Pigeons than Ducks in our fowl house.

BOOK FOR BEGINNERS (*An Inquirer*).—The best practical cheap book for beginners that we are acquainted with, is "Bee-keeping for the Many," which you can obtain from our office by enclosing five stamps.

SUPERS FOR STRAW HIVES (*Idem*).—Supers of almost any material and of any reasonable sizes, may be worked on ordinary straw hives, provided that a 3-inch hole be cut out of the crown of the hive, and a clamped board having similar aperture be secured on the hive with putty. We use bell-glasses, octagonal glass boxes, and square wooden boxes in this manner. Small straw caps may also be employed. The swarm should be hived in the stock hive, and if the weather be favourable, communication with the super given a week or a fortnight later, or, in a bad season, not until the following year.

GOLD FISH (*T. H. T.*).—The tank in your vinery will answer; but the water must be frequently changed, a layer of sandy gravel be at the bottom, and aquatic plants grown in it.

POLISHING BUFFALOES' HORNS.—"B. V. S." wishes to know how this is effected.

METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		A.M.				IN THE DAY.						Rain.
August	Baromet. terrace and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Tem- perature.		Radiation Temperature		On grass		
		Dry.	Wet.			Max.	Min.	In sun.				
We. 14	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.			
Th 15	30.256	61.8	53.6	N.	60.0	75.9	50.5	125.3	48.4	—		
Fri 16	30.320	64.5	53.8	N.E.	61.8	73.2	49.8	117.0	48.6	—		
Sat 17	30.313	67.5	58.7	N.	60.5	74.0	50.4	104.2	50.2	—		
Sun 18	30.047	69.0	63.2	E.	61.0	83.0	52.0	120.0	51.2	—		
Mo. 19	30.184	70.2	63.0	N.	61.6	77.6	53.8	119.8	52.2	—		
Tu 20	30.180	68.8	61.8	S.	61.8	77.5	52.4	122.0	52.0	—		
	30.146	63.4	63.3	N.W.	62.6	75.8	55.0	120.5	54.5	—		
Means	30.149	67.2	61.1		61.2	76.7	51.8	118.4	51.1	—		

REMARKS.

- 14th.—A very bright, fine, and pleasant day; but the moon hazy at night.
15th.—Rather dull in the morning; but getting gradually finer in the afternoon; evening very fine.
16th.—Somewhat dull in the morning; but afterwards a splendid day and night.
17th.—Fine, though rather hazy early, but a very fine day, and perhaps a trifle too warm, though there was a nice breeze.
18th.—A brilliant day, almost without a cloud either by day or night; the moonlight almost dazzling.
19th.—Another cloudless day, but with a cool breeze.
20th.—Cloudy early, but soon disappearing, and again gathering in early part of afternoon, looking almost stormlike; brilliant late afternoon and evening.

A week without rain, and the latter part of it almost without a cloud. Except for a short time on the 20th, the days have been very warm, but the evenings cool and pleasant, and even in the hottest part of the day there was a nice air to temper it. Barometer very steady, temperature about 5° above that of last week.—G. J. SYMONS.

COVENT GARDEN MARKET—AUGUST 21.

MARKETS are slow and inactive, the chief amount of business being among the imported goods, which continue to be heavily supplied, and realise good prices. We have a great deal of complaint respecting the spread of the Potato disease, and large quantities are forced into market.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	1 sieve	2 0 to 0 0	Mulberries.....	1 lb	1 0 to 0 0
Apricots.....	doz.	2 0 4 0	Nectarines.....	doz.	3 0 8 0
Cherries.....	per lb.	0 0 0 0	Oranges.....	10	8 0 14 0
Chesnuts.....	bushel	0 0 0 0	Peaches.....	doz.	4 6 12 0
Currants.....	1 sieve	0 0 0 0	Pears, kitchen.....	doz.	0 0 0 0
Black.....	doz.	0 0 0 0	de-sert.....	doz.	2 0 4 0
Figs.....	doz.	2 0 4 0	Pine Apples.....	lb.	3 0 6 0
Filberts.....	lb.	1 0 0 0	Pumas.....	1 sieve	5 0 0 0
Cobs.....	lb.	0 0 0 0	Quinces.....	doz.	0 0 0 0
Gooseberries.....	quart	0 9 0 0	Raspberries.....	lb	0 0 1 0
Grapes, hothouse.....	lb	2 0 5 0	Strawberries.....	1 lb	1 0 2 0
Lemons.....	100	8 0 14 0	Walnuts.....	bu	10 0 25 0
Melons.....	each	2 0 5 0	ditto.....	100	1 0 2 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	doz	4 0 to 6 0	Mushrooms.....	potl	1 0 to 3 0
Asparagus.....	100	0 0 0 0	Mustard & Cress.....	punnet	0 2 0 0
Beans, Kidney.....	1 sieve	3 0 0 0	Onions.....	bunch	0 4 0 0
Broad.....	bu-h-l	3 0 0 0	pickling.....	quart	0 6 0 0
Beet, R-d.....	doz.	1 0 3 0	Parsley per doz. bunches	3 0 4 0	
Broccoli.....	bund	0 9 1 6	Parsnips.....	doz.	0 9 1 0
Cabbage.....	doz	1 0 1 6	Peas.....	quart	0 1 6 0
Capicums.....	3-10	2 0 4 0	Potatoes.....	bush	2 0 4 0
Carrots.....	bunch	0 6 0 0	Kidney.....	doz.	2 0 4 0
Cauliflower.....	doz.	2 0 4 0	Round.....	do.	2 0 4 0
Celery.....	bundle	1 6 2 0	Radishes.....	doz. bunch-s	0 6 1 0
Cow-corts.....	doz. bun	2 0 3 0	Rh. barb.....	bundle	0 0 0 0
Cucumbers.....	each	0 3 1 0	Salsify.....	1 bund	0 9 1 0
pickling.....	doz.	0 0 0 0	Savoy.....	doz.	0 6 0 0
Endive.....	doz.	2 0 0 0	Scorzoneria.....	1 bund	0 9 1 6
Spinach.....	bunch	0 8 0 0	Sea-kale.....	basket	0 0 0 0
Garlic.....	lb.	0 8 0 0	Shallots.....	lb	0 4 0 9
erbs.....	bunch	0 3 0 0	Spinach.....	bushel	3 0 4 0
Horseradish.....	bundle	5 0 7 0	Tomatoes.....	doz.	2 0 4 0
Leeks.....	bunch	0 2 0 0	Turnips.....	bunch	0 3 0 6
Lettuce.....	doz.	0 9 1 0	Vegetable Marrows.....	doz.	2 0 4 0

WEEKLY CALENDAR.

Day of Month	Day of Week	AUG. 29—SEPT. 4, 1872.	Average Temperature near London.			Rain in 43 years.	Sun Rises.		Sun Sets.	Moon Rises.		Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.		m.	h.		m.	h.				
29	Th	Sevenoaks Horticultural Show.	71.2	47.5	59.4	16									
30	F	Bishop Auckland Horticultural Show.	74.5	48.2	61.3	11	10	5	49	6	47	0	25	0 28	242
31	S		71.5	47.4	59.4	17	12	5	46	6	51	1	26	0 20	243
1	SUN	14 SUNDAY AFTER TRINITY.	71.1	47.5	59.3	21	14	5	44	6	57	2	27	0 2	244
2	M	Partridge Shooting commences.	71.0	47.6	59.3	19	16	5	42	6	9	4	28	after.	245
3	Tu		71.8	47.7	59.2	19	17	5	40	6	19	5	29	0 36	246
4	W	Royal Horticultural Society, Fruit, Floral, [and General Meeting.	71.0	46.7	58.9	19	18	5	38	6	31	6	1	0 55	247
														1 15	248

From observations taken near London during forty-three years, the average day temperature of the week is 71.7°; and its night temperature 47.5°. The greatest heat was 85°, on the 1st, 1843; and the lowest cold 30°, on the 4th, 1850. The greatest fall of rain was 1.92 inch.

THE CULTIVATION OF THE PHLOX.



THE bi-monthly meetings of the Royal Horticultural Society at South Kensington are, without doubt, the most useful gatherings of the kind we have at present. There is always something exhibited of much interest to the botanist, the pomologist, or the florist, and growers of any description of fruit or flowers have an opportunity of exhibiting them when at their best. Spread as the meetings are over the whole course of the year, the subjects exhibited are necessarily diverse in their nature.

On the 7th inst. the justly-celebrated growers of florists' flowers, Messrs. Downie, Laird, & Laing, of Edinburgh and London, exhibited a large and exceedingly well-grown collection of Phloxes. Nearly twenty years ago the firm was noted for raising new sorts of the early-flowering kind, *Phlox pyramidalis*. This section succeeds best in Scotland, and is held in high estimation there for exhibition purposes; it seems to delight in a cool and moist climate, as it does not succeed at all in the neighbourhood of London. All the varieties exhibited on this occasion were of the *P. decussata*, or late-flowering section. Cultivators of this lovely autumn flower are much indebted to Mr. Laing for many improved varieties; some of those exhibited were shown for the first time, and will be sent out next season. Amongst those not yet sent out I noted *Ada Louisa*, very clear white, with distinct red eye; Countess of Eglintoun, rosy purple, flowers of good shape; H. M. Simons, rosy crimson, fine-shaped tips, large spike; J. K. Lord, rich carmine, crimson centre, good spike; Princess of Wales, very large flowers, distinct crimson eye; Purple Prince, rosy purple, dark eye, and large spike.

Amongst older varieties the best were *A. F. Barron*, a splendid variety, lilac, with a purplish-crimson eye, the flowers very large, and of fine form; *Amabilis*, salmon, with a purple eye; *Chaney*, large, rosy purple; *De Caen*, bluish, well-shaped flower; *Madame Autin*, very brilliant, violet red; *Madame Billy*, bluish, purple centre; *Madame la Comtesse de Turenne*; *Madame Domage*, a good old sort, fine habit; *Monsieur Marin Saison*, salmon red, dwarf, and extra fine; *Lothair*, in the way of *Amabilis*, but a much better flower (this and *A. F. Barron* are, perhaps, the best flowers yet sent out); *Liervallii*, a very distinct rose-coloured flower with white stripes; *Monsieur Conrad*, very handsome truss; *Czarina*, very dwarf, white; *La Candeur*, white, with cerise eye; *Monsieur Thallard*, glowing reddish salmon; *Queen of Whites*, pure white, a splendid flower; *Souvenir de Nancy*, rosy purple; *Souvenir de Berryer*, crimson purple centre; and *Mrs. Laing*, lilac, perfect-shaped flower.

The culture is very simple, and the propagation easy. Cuttings should be struck early in March. I insert one cutting in the centre of a small pot, and place the plants in a hotbed. Very little bottom heat is required. The frame should be kept close for a few days, and the cut-

tings shaded from bright sunshine; in two weeks most of them will be rooted, when more air should be admitted; in a week or two more the young plants should be removed to a cold frame, and when well established place the plants in 6-inch pots. By this time they may stand out of doors in an open position, but not in a current of wind. A neat stick, about 18 inches in length, should be placed to each plant. No other attention will be required, except to supply them very liberally with water, especially after the pots are full of roots. The pots should stand on a hard bottom of ashes, and if they are plunged in ashes much less water will be required. The plants will flower well in these pots about the beginning of August, and are useful in many ways. A few of them may be arranged in the greenhouse or conservatory with the long stalks hidden amongst a green undergrowth of Ferns or foliage, in which way a fine effect is produced. I have also found such plants exceedingly useful in filling up a background in the flower garden. When the flowers have faded the stalks should be cut over close to the ground, and the pots plunged out of doors, if a cold frame is not at liberty; in either case the pots should be plunged to protect the roots from frost. If the plants are out of doors, some litter should be at hand to throw over them during severe frost; some common bracken is as good as anything for this purpose.

In spring, when the shoots have grown an inch or two, the plants should be turned out of the pots, some of the soil picked out from amongst the roots, and the plants repotted in 7-inch pots. Five or six shoots will be enough on one plant. Should more be thrown up they must be thinned-out, and may be used, if required, for cuttings. When the pots are filled with roots, which will be in a surprisingly short space of time, repot into 10-inch pots. The potting material used throughout should be good, and may be composed of turfy loam four parts, good solid cow and stable manure in equal proportions one part, and one part decayed leaf mould.

A fresh lot of cuttings should be struck every year, as when the plants grow old it is best to throw them away. Some persons—I cannot call them cultivators, but I suppose it is to save trouble—divide the old plants from the open ground by cutting them through with a spade, but good plants are never obtained in this way.

Phloxes are excellent subjects either for planting in beds or in the open borders; but to obtain superior spikes the former method is the better, as then the beds can be made on purpose for them. The ground should be well trenched and highly manured, and the plants should be "set out" in rows (four rows in a bed) 2 feet apart, with 20 inches between the plants in the row. The best time to plant-out is in spring, after the plants have started into growth. One-year-old plants are to be preferred, and the shoots should be thinned-out and trained in a similar manner to the plants in pots.

In dry hot weather Phloxes must be well supplied with water, as should they suffer from lack of moisture at the roots, whether planted-out or in pots, nearly all the stalk-leaves will drop off, and the spikes will present a

miserable appearance. It is also highly necessary to place a stick to each spike to prevent it from breaking over close to the ground. Amateurs who have little or no knowledge of this plant ought to grow it.

Glass protection is not essential to the culture of the Phlox, as cuttings readily throw out roots in the open ground, and they can be at once transplanted into beds. Not half the trouble is required to grow it that there is with scarlet Geraniums and other bedding plants which require to be wintered in a glass house.—J. DOUGLAS.

STRAWBERRIES ON A LIGHT SOIL.

I CAN give confirmatory evidence of the mode of growing, detailed by the Rev. C. P. Peach, on page 108.

I am quite certain that the great point to be attended to in light soil is to have it firm. I am not quite so sure, however, that is generally safe to make a cardinal point of raking the manure put on in autumn clean off the following April. I do not mean to say the practice is to be deprecated, but it requires a little thought in carrying it out, such as is sure to be given by practical men; but, perhaps, not so surely by others who like Strawberries, and try to grow them almost solely by book-guidance. I once saw a Strawberry crop nearly ruined by the clean raking-off of the manure in April, and the lesson I have never forgot. It was a large bed of Keens' Seedling, and I was one of the rakers acting under instructions. I had at that time been fourteen or fifteen years in the houses as foreman, &c., and a notion came over me of a danger of getting a little too kid-gloved in habit, and lacking a sufficiency of practical knowledge in kitchen gardening. I therefore determined on a retrograde step, and although it may seem paradoxical, the retrograde movement was the greatest step in advance I ever made in gardening, and one which I have found the most useful. I had had a surfeit of the houses and meant to be out of them for a time. I desired out-door work, and offers of kitchen-garden foreman were made, but the idea of playing foreman over a lot of men ten times more experienced than myself was too much for me, so instead of being foreman over, I preferred to be labourer working with some good men of life-experience in out-door work. I could hear sinister hints at a "let-down," but the only way I felt the let-down was 12s. per week instead of 17s.; yet I knew I was a learner and put up with it, and it was here I learned the following:—Orders were to rake the manure clean off. In went the rakes and up came the beautiful white young fibres of the Strawberries. The ground bristled with them. The sun shone brightly and browned and burnt them quickly up. Attention was gently drawn to them, but the order was repeated, "Go on raking," and on we went accordingly. But after a time we held a secret confabulation, and decided to "slip" some here and there for experiment, and to hide our deceit sprinkled a little soil over the manure as nicely as possible. The spring continued hot, and those with the manure left on were by far the best. The others threw-up too short bloom-stalks and gave too many black-eyed blossoms to form a fine crop. I have since seen rather unsatisfactory results from the same practice. It may be all right in rainy districts, or, as in the case of Mr. Peach, where others can be made so by attention given in watering, &c., at the right time; but in dry localities with a lot of all sorts of work to look forward to, I think the safer plan is to leave some of the manure on. Of course, it must not remain packed round the crowns. I generally, in the spring, go down the rows and with the hand thoroughly expose the stools, and by this, and leaving between the rows the little manure that remains, obtain better crops than by taking it all away.

It is well to look at all sides of a question, to adduce what can be said against as well as for it, and with this little explanation on one point, I know Mr. Peach's plan to be good. But yet, even in light soils and with stout early runners put in during July, I often get nice crops the first year, and by planting three plants triangularly about every 2 feet, there is, the first season, every appearance of a two-year-old established plantation. I have now a bed of six rows of President, one half being one-year-old, and the other half two-year-old plants, and it would require a very expert grower to tell which are which. But a specially wet season has made the young plants grow very freely, and I will not say that in the end, taking one season with another, that Mr. Peach's system is not the better.

In good, sound, real Strawberry soil it is easy to have fine crops the first year. I think such are annually produced in

the capital garden of "C. C. E.," who plants at 1 foot apart, and after the first crop removes every alternate plant. This is a good, quick, and profitable mode of culture. I have had good crops on this light soil on the easy plan once described in the Journal by the Rev. W. F. Radclyffe. It is without either digging or manuring (except on the surface), and by liquid manure. After taking a crop of Cauliflowers, and when the ground was quite hard, I scooped out some hollows a foot in diameter, and poured into each a three-gallon can of drainings from the cowyard. The next morning I levelled and planted on each soaked place three plants. They grew well and produced a fine crop the first year, one a little finer the second, and the plants look in excellent condition for another year's bearing. We cannot, however, always secure a good supply of early runners; then there is Mr. Peach's system as a sheet anchor to fall back upon.

Every fresh letter proves how capricious the Strawberry is. With me President for general usefulness heads the list. With Mr. Peach it is not worth special mention. With Mr. Peach Rivers's Eliza has honourable mention; with me it is of no use, I have tried it well and have now dug it up in order to bury it to make other sorts grow. I hope I may find it of some use below the ground; it was certainly none above it. We want the Strawberry season prolonged. I have Black Prince and Vicomtesse Héricart de Thury for early use, and wish to hear thoroughly reliable and practical information of Dr. Roden's Prolific. I want some proofs that a sort is really good before I try it, the supply of a large family from a limited space preventing much experiment. I have not Eleanor, but for late kinds have, I hope, Elton and Frogmore, and by the kindness of a friend, late Prince of Wales. If I find them good I will, for the benefit of others, let the results be known.

For prolonging the season raisers must look for lateness. We cannot well have much earlier sorts on account of late frosts. In a distinct late kind high-class flavour will be willingly overlooked. The great bulk of Strawberry-eaters are not connoisseurs. The point to be aimed at is to place presentable dishes on the table now. They would be warmly welcomed, and a thousand gardeners would rejoice to grow them. He who can send out a kind later than any we now possess, distinctly and constantly later, so long as it is a free bearer and fair-looking fruit, even if it is not of the highest possible quality, will deserve honour and reward, and will obtain both.—J. W., Lincoln.

P.S.—If the Rev. C. P. Peach would undertake the same duty in regard to Strawberries that he so well carried out with Roses, I think he could not fail to do good service—viz., lists from growers of the best, early, medium, and late sorts, with the nature of the soil and other conditions in which each was grown.

NOTES ON ROSES.

It is with some diffidence that I venture to add my mite to the contributions which have appeared in the Journal on Rose-culture, nor can I claim to approach some of your correspondents either in experience or skill, and yet the struggles of a beginner towards light and knowledge may possibly be of service to others. I never go into a garden without learning something—that is, either something to imitate or something to avoid: so, one can scarcely read an article on Roses without picking up some crumbs, even though they be as scarce as the rays of sunshine during a part of this autumn.

What a marvellous and eccentric season this has been! My poor Climbing Devonensis, my pride and glory last year, covering an expanse of south wall with a profusion of beautiful blossoms, was scorched by the frosts just when about to bloom, and for a long time looked a perfect wreck; Margarita, another free grower, suffered a similar fate, together with many others; but Glory of Waltham, on the same wall, which I had previously despised and thought of uprooting, bloomed incessantly from the end of April, and was the pride of the place, with its fresh bright colour and handsome look when not much opened. Maréchal Niel did not suffer so much, but the leaves, with me, seem susceptible of cold, although the branches do not die off. Cloth of Gold put in last autumn—a tall strong plant several feet high—has not bloomed, but a friend tells me that I must not expect any blossom for three years. Is it true that this golden beauty is so chary of her charms? Climbing Victor Verdier has bloomed most beautifully, and I do not grudge Messrs. Paul & Son the 5s. which they asked for their new plant, but there is no "climb" at

present about my Victor Verdier received from them; however, the fault may be mine, as I ought to have sacrificed bloom to growth—at all events for a time. Perhaps, too, I should have waited until June before planting it out.

I have always hitherto planted Roses from October to January, whether tender or otherwise; this year, however, I planted Rêve d'Or, Souvenir d'un Ami, Belle Lyonnaise, and a climber which Messrs. Lane recommended, but of which I know nothing, Princess Louise Victoria, as soon as the frosts were over, and they are all making marvellous progress. They were transferred at once from the forcing house to the base of a south wall, and seem quite at home in their new quarters.

As I have touched upon climbers, I may mention that no Rose this year has done better with me than the Rev. H. Dombain, a Rose first brought to my notice by Mr. Wright, the well-known foreman of Messrs. Lane, now unhappily deceased. Another of his nominees, Madame Deslongchamps, classed among the Noisettes, ought not to be overlooked by those who want a free climber combined with good form. Ophirie and Solfaterre, said to be among the best of the Noisettes, are at present with me rather failures, but possibly I am wanting in patience. Nor must I forget Pierre de St. Cyr, a fast climber, with a flower whose glossy pink is often very charming; nor Blairii No. 2, which, when it blooms, is simply superb. I have not succeeded in inducing Triomphe de Rennes to mount my walls, but a poor neighbour of mine has a specimen on his cottage which I would walk five miles to see when in full bloom; it is, I should think, 10 feet high. Sénateur Vaisse, I suppose, would never be called a climber; I have a specimen, however, which must be 6 or 7 feet high. Neither Céline Forestier nor Lamarque has been a success with me, but I am convinced that my mistake has been that I have planted in November instead of the end of May.

I have been very much struck of late with what seems to me the want of skill among Rose-growers in keeping up a constant succession of blooms all through the season. Wandering round the grounds of Castle Ashby, in Northamptonshire, a few days since, I did not observe a dozen blooms among the hundreds of Rose trees there. Gloire de Dijon, of course, was to be seen, but was alone in its glory. The weather, it is true, has been as bad as is possible; all Roses have been peculiarly short-lived this season; still, I am persuaded that much may be done by keeping a proper selection, by taking off all the dead blooms, removing suckers, and feeding liberally with liquid manure to insure a regular succession. Our gardeners supply us with Peas from the end of May to the middle of October; why not with Roses? This point I cannot but think is often overlooked by those who recommend us lists.

The leaves of many of my Rose trees this season have been as if they were perforated with holes in a strange fashion, the evil being occasioned, I believe, by a wretched little caterpillar which has attacked other flowers in the same way. I have directed my gardener to try the hellebore powder, which I often see recommended in the Journal; but he seems afraid of the cost, as well as doubtful of its efficacy. As I am writing away from home I cannot say whether the recipe has succeeded or not.

I have often seen the claims of Homère advocated in your columns. Permit me to add my testimony to its merits. It is a very free bloomer, has a tint and a colour quite its own, and never fails to please when presented to a stranger. It is curious that this Rose is missing in some of our nurserymen's lists.

How long will a standard Rose last? This is a question which I have never seen discussed in the Journal. A friend of mine, who is famous for his Roses, declares that they ought to be got rid of after three or four years; but I have seen blooms on standards which must have been planted from ten to twenty years. Their gnarled and knotted stems seemed to indicate a great age, but possibly they were in this state when first budded.

Your columns contain so many lists of Hybrid Perpetuals that I will not encumber them further than to say that Antoine Ducher, John Hopper, Madame Clémence Joigneaux, Alfred Colomb, and Madame Thérèse Levet have done particularly well with me this season.

Allow me in conclusion to ask some of your readers to recommend a good white Rose which does not bloom in clusters, but singly. Baronne de Maynard and Louise Darzens I have already, but Alba Rosea, Niphotos, Boule de Neige, &c., are "shadows of a name" only. I want a few white standards,

and have no more room on my south wall.—E. BARTRUM, Berkhamsted, Herts.

WINTER-FLOWERING PLANTS.—No. 3.

CENTROPOGON LUCYANUS.

THIS is an evergreen herbaceous plant with pale green rather large leaves, and terminal heads of bright red, long tube-like flowers. It is of moderate growth, attaining a height of about 2 feet; but small plants may be flowered at a height of from 9 to 15 inches.

Cuttings of the young shoots may be put in at any time, and in a gentle heat they root freely. I usually insert the cuttings in April, early in May, or as soon as shoots 3 or 4 inches in length can be had. They are cut over below the lowest joint, the leaves removed 2 inches up the cutting, and then inserted singly in pots 2½ inches in diameter, using a compost of two parts fibrous loam, one part leaf soil, and one part sandy peat, with a free admixture of silver sand. In putting in the cuttings make a hole in the centre of the pot, drop in some silver sand, and fill up round the cutting with the same material; then water gently, and place the pots in a close frame with a temperature of 70° to 75° at night, keeping close, shaded, and moist until the cuttings begin to grow; afterwards admit air, and gradually harden them off. They will root all the more freely if they have a bottom heat of 75°.

When the roots are matting the sides of the pots shift the plants into 4½-inch pots, using the same kind of compost as before, and place them in a house with a temperature of from 65° to 70° at night, having a moist well-ventilated atmosphere. The shelf of a stove so situated that the plants may be 15 inches from the glass will answer well. They will need to be encouraged by a gentle sprinkling overhead two or three times a-day, and moderate watering at first, increasing the supply as the pots become full of roots; but when the plant has taken to the fresh soil after having been potted, the shoot ought to be cut back to within three or four joints of the surface of the soil, which will render watering less necessary for a time, and yet the moisture must be sufficient for free growth. By August the plants should be in their flowering pots, which for this class of plants may be 7 inches in diameter. The drainage should be good, but need not be excessive, and the plants must have a moist atmosphere and due supplies of water to keep them in a free state of growth. This kind of treatment should be continued until they have made a good growth, and as it will be of no use for flowering unless it is strong, stiff, and short-jointed, they must be kept close to the glass and well attended to in point of ventilation.

No training is required, for by turning the plants round frequently and exposing opposite sides to the light, they will grow evenly. Irregular growth, however, may need some regulation, which should be seen to in time; a peg at first may give the required direction to a shoot, which, if allowed to grow unassisted, might require a stake to bring it to the position desired.

After October the plants should have the lightest and most airy position in the stove, and the watering should be no more than is sufficient to keep the foliage fresh. This will cause the wood to ripen, and the terminal head or point of the shoot to set for flower. When the plants show signs of flowering water more freely, but avoid making the soil sodden, or syringing much overhead. Though sprinkling overhead once or twice a-day does good, yet when it is heavy, and the leaves remain long wet, they become spotted and fall. The plant usually flowers in January, and the blooming continues until April. The heads of bloom are excellent for cutting, and though it is not so attractive a plant as many, it is nevertheless useful for decorative purposes, and deserves extended culture.

Centropogon Lucyanus is a stove plant, but may be grown in a house having a winter night temperature of 50° to 55°. The main point is to secure good growth in summer by giving plenty of heat and moisture, and in winter it endures dryness and coolness, and flowers all the better under these conditions.

Should plants in small pots be wanted, the points of the strong-growing shoots may be taken off in July, inserted in small pots, and struck in heat, shifting them in August into 4-inch pots, and keeping them on shelves near the glass. Thus treated they will flower on stems from 6 to 9 inches high, and are very pretty.

The old plants need only have the worn-out and weak wood cut out in April, and after they have pushed fresh shoots a few

inches long, they should be shaken out and repotted, keeping them close, moist, and shaded for a few days until established. Shift them into their blooming-pots at the end of July. A well-grown large plant is very handsome at midwinter, and invaluable where cut flowers are in demand, as it will in no way be impaired by the removal of the bloom, for all the blooming shoots need to be cut back.

DALECHAMPIA ROEZLIANA ROSEA.

This may not inaptly be termed a perpetual bloomer, for it produces its flowers nearly throughout the year, and that on plants only a few inches high. The leaves are long, oak-like, deep green when full-sized, but pale rose-coloured in a young state, very durable, and so abundant as to completely cover the stem. Above this mass of deep green foliage are produced the flowers, which owe their beauty to the large rosy-pink bracts, which are very persistent, continuing several days in beauty. Its flowers are sweet-scented, but its chief attractions are its dwarf leafy habit, free-flowering character, and continuous flowering. It springs up freely from seed; indeed is such a weed with me in the stove that I have not had to resort to any other mode of propagation, and owing to its continuous blooming the seedlings are plentiful at most times of the year. I usually take up the plants in spring when they have two or three leaves besides the seed leaves, pot them singly in 3-inch pots, using a compost of equal parts turfy loam, sandy peat, and leaf soil, with a free admixture of silver sand, and place them on shelves in the stove. I sprinkle them overhead twice daily, and shade from bright sun for a few days if the sun is powerful. In these pots the plants remain until the end of July, when they are shifted into 4½-inch pots, and encouraged with heat and an abundance of moisture. Syringing twice a-day may be practised up to October, when they should be kept rather dry—not so much so as to affect the foliage, though the plant will endure the extremes of dryness and wet, heat and cold, better than any other I know. By keeping the plants moderately dry we secure, however, a cessation of growth, and they will flower as soon as the days have turned, and continue doing so from January to May.

If we wish the plants to flower in less than 4½-inch pots we have only to turn them out of the 3-inch pots, remove all the soil we can, and place them again in the same size of pot. They will flower well in this size of pot, and whether we pot them or not they invariably flower when 3 to 4 inches high. In fact I have some plants now in 3-inch pots that have not been without their bracts for months, and are not likely to be, as they still throw out more.

It is well to note, that though this plant is almost continuous-blooming there are times when the flowers are produced more abundantly than at others. These periods are with me early in spring and late in summer—February, March, and April; and September, October, November, and December. Whenever it begins to grow it begins to bloom, for the flowers are produced from the axils of the leaves, and by remembering this we can have the plants in flower at any time required. We have only to keep the plants rather dry and cool for, say, two or three months, and then introduce them into a house with a temperature of from 70° to 75°, fresh pot, encourage with free watering and atmospheric moisture, and it begins to grow and flower. Half its beauty consists in the manner in which it clothes the stem with its persistent long leaves which hide that completely, and hang down over the pot.

As a plant for table it is unique, and very handsome specimens may be formed. The way to do this is to stop a seedling plant when 3 inches high, which will cause it to break and produce two or three shoots. These should be stopped again at the third leaf, and repeatedly until we have half to a dozen shoots, no flowers being permitted to more than show until we secure the number of shoots required; then it is well to keep the plant rather dry and cool for a few weeks, and introduce it into heat and moisture when we want it to bloom, a month to six weeks being required. The plants need not be potted oftener than twice a-year, and I consider March and July the best months. The compost for both old and young plants may be the same. It seems to delight in vegetable soil, and the bracts are improved in size by the addition to the compost of one-fourth of old cow dung or well-rotted manure.

A 6-inch pot is large enough for a plant with half a dozen shoots, whilst an 8 or 9-inch pot will well grow one with a dozen. The plants for decorative purposes are best in small pots; in their case, instead of shifting into a larger one, at pot-

ting, reduce the ball and return it to the same sized pot. The fresh soil seems to do wonders—plants do not grow any better because we leave the old soil, but seem to benefit only by the fresh. A plant in a 6-inch pot with half a dozen shoots, each carrying as many flowers, or twice the number of bracts (they just appearing so high above the foliage as to show to good advantage) not more than 9 inches to a foot high, and with foliage drooping over and partly hiding the pot, is a subject well worth our attention, and a plant twice the size is very handsome. Whether grown in the shade or in the full sun—at a few inches or several feet from the glass, it is always dwarf, always free-growing and free-flowering.—G. ABBEY.

SOME PREDATORY INSECTS OF OUR GARDENS.—No. 34.

He who looks upon insect life with the eyes of one who is half a poet and half a naturalist, sees things very differently to a farmer or a gardener, who is practically acquainted with the injuries done to the produce of cultivated ground by these pertinacious foes. Thus, we may imagine such a stroller contemplating with satisfaction the amusing evolutions of a host of Turnip "fleas" just about this season of the year. He might exclaim about the liveliness and rapidity of their movements, the harmony which prevailed amongst them, the strength of their muscles, and the admirable adaptation of the structure of their tiny, yet well-cased bodies, to the life they lead. But the Turnip-grower, like one of Milton's impersonations, will most likely "grin horribly a ghastly smile;" their numbers, instead of exciting his astonishment, only create disgust, and every skip they take means mischief, while their form and habits are just such as he would not have endowed them with if he had had the ordering of them, because they render the destruction of the insect more difficult; in fact, *Haltica nemorum* stands forth prominently amongst those insects which the farmer would like to place in his Index Expurgatorius, could it be thus got rid of. But indignation avails little; the insect prevails against the cultivator of the ground, feeble as it appears, by force of number and rapid multiplication; nor could any process of exorcism be brought to bear upon the Turnip flea which would force it to flee from those localities where its presence is so undesirable.

Let it be noted here, ere we proceed, that though the species before us is indifferently called by observers the "fly" or "flea," it has certainly no right to the former name, as the Turnip is infested by more than one true "fly," while this is obviously a beetle. Therefore, indeed, the name "flea" is in a manner as inappropriate, if the structure be considered, and it is only the habits of the insect which can at all render the cognomen allowable.



Haltica nemorum.

But why is the specific name *nemorum* applied to it, some might ask, since the beetle frequents gardens and fields, not shady spots! I cannot justify this; and yet, singular to say, I believe that some of the species of *Haltica* (and *H. nemorum* possibly amongst them) do occasionally resort to woods. Once, passing along the edge of a wood, just within the cover, I noticed hosts of small beetles leaping about the bushes, seemingly for amusement merely, as they were not devouring the leaves, nor engaged in oviposition, so far as I saw. At the time I took little heed of the occurrence, but as there were Rape fields not far off, it afterwards struck me that these might have been Turnip fleas or their congeners, which, for some reason best known to themselves, had temporarily sought the shade of the woodlands. Yet, on the other hand, it must be granted that this species is, on the whole, of more frequent occurrence in open fields than in the enclosed, and usually more sheltered, kitchen gardens, which would not tend to prove that it was partial to retired localities. However, it is probable the giver of the name knew little about the habits of the insect at the first: I might add that in the vernacular some folks call *H. nemorum* "Black Jack," and this may be, because, as Dr. Johnson says, "Jack is a diminutive and general term of contempt;" or, is this name connected

with the French *jacque*, a coat of mail, alluding to the tough wing-cases of the insect?

It has often been a matter of wonderment from whence the insects suddenly appear in early spring, and pounce upon the seed-lobes of the Turnips immediately upon emergence from the earth; and authorities differ as to whether they pass the winter in the pupal stage, or whether they have lived through it as beetles in a semi-torpid condition. However, they are lively enough, and very voracious, just, unfortunately, at the time when the plant has quite enough to do to hold its own without having to withstand an attack of this kind. Later in the season (for there seems to be a succession of these insects upon the crops), of course, a minor degree of injury is produced. The history of *H. nemorum* has been made in some measure obscure from the circumstances that both the larva and beetle prey upon the Turnip, and authors have not been always sufficiently careful in explaining to which they were referring. The beetles or "fleas" are to be found from April to September; the larvæ are most frequently observed in May and June; but the habits of the species in these two conditions are markedly different. There can be no question that the beetle is the worst enemy, since it is this which will, if unchecked, entirely destroy in some years two or three successive sowings in the spring.

If we pick up one of these and examine it with a pocket glass, we see at once, from the appearance of the wing-cases, that it is undoubtedly true that the insect is not hurt by considerable pressure, and we can understand how it can, if it wishes, enter the earth. The elytra, or wing-cases, are both elastic and strong, rather glossy, with minute punctures scattered over them, and a well-marked pale stripe in the middle of each. The thorax, which is narrow, is also punctured, and of the same dark hue as the wing-cases. The whole length is hardly one-eighth of an inch. One naturalist has stated that the work of egg-laying goes on slowly, for it was observed that ten pair in the course of a week only laid forty-three eggs; but if this calculation was made with specimens in confinement, it is of little value, the rate of oviposition being always modified under an unnatural constraint. It is certainly probable that the total number laid by each individual is not large, but from the mode of life of the young larvæ they escape perils which beset some when very juvenile. These mine the leaves of the Turnip, forming tracks in the parenchyma or pulp, which are often tortuous. It has been asserted that they are full-grown in about sixteen days—a rate of growth which is presumably exceptional, and occurring only under very favourable circumstances. When adult they descend to the earth, and, with singular instinct, choose a temporary resting-place at the root, where they are best protected from rain, and also excessive heat. The larvæ or "grubs" have the usual characteristics of those of their order, being of a dull flesh colour, with dark eyes and two dark patches on the head and the last segment of the body. The feet are six in number, and supplied with muscles very helpful to the larvæ in their work of burrowing.

There is much force in the assertion of Stephens, that it is better to prevent the appearance of the "flea" than to wage war against it. But how? A dry season is favourable to this insect—so much we know, and hence artificial waterings have been found efficacious in keeping it off, or in diminishing its numbers, when natural showers were withheld. No doubt as much stimulus as can safely be given to the Turnip at an early stage is quite advisable, since the more vigorous the plant the less it suffers from the attacks of this beetle. Steeping the seed as a preventive has been highly recommended by some, and as absolutely rejected by others. McIntosh advises us to put the seed in sulphur before sowing, and afterwards to sprinkle sulphur on the earth; and it has been proved that the application of spirits of tar or gas lime soon after sowing is very disagreeable to these beetles. The scheme of sowing a quantity of seed of different ages turned out a failure. According to this idea, the first which would germinate being the seed of the previous season, the insects, it was thought, would prey upon this, and leave untouched the crop which rose from the older seeds. In actual practice, however, it was discovered that a succession of "fleas" made their appearance just as each growth of Turnips was in the condition that suited them best, so thereby nothing was gained.

This beetle has its parasites of insect nature, and also serves as food for various birds. Turning out poultry, in order that they may prey upon them, has been found a rather "risky" plan, as any knowledge of gardening they possess is theoretical,

and is never allowed to interfere with their practical researches for food.

More active measures for the destruction of the Turnip flea tend mostly to the removal of the insects from the plants by sweeping or otherwise. Where the space on which the operation has to be performed is but limited, a piece of cloth smeared with some adhesive compound is attached to a handle and drawn backwards and forwards among the young plants. Dusting them with lime or charcoal is a common and not unsuccessful expedient. It need hardly be said that fumigation is inapplicable. Trenching the ground deeply in winter has been advised. In a report written by Messrs. Hardy and Langlands respecting the ravages of this insect in the north of England during 1870, it is stated that in a field where wild Mustard had sprung up it rendered much service by withdrawing the "fleas" from the young Turnip plants; and Mr. Hardy adds that he has heard of similar instances, though weeds of the Cruciferous order, especially Cardamine, have in other cases helped to nurture the species and bring it forward, so that it is advisable to eradicate these in the vicinity as far as possible. The observer just quoted remarks that the patches of waste ground, "if they do not furnish all, yet help to augment the hosts of 'fleas' which invade the cultivated lands." According to Kirby, a service similar to that rendered by the *Sinapis arvensis* was noticed by him to be effected by Brussels Sprouts, about which some patches of young Turnips were sown, and nearly all the *Halticæ* were drawn off from the latter. Giving an account of the injury produced by the Turnip flea in Northumberland in 1870, Mr. Langlands points out that though it was more abundant than he had ever seen it, the plants sustained the greatest damage later in the season than usual, and after they had survived the perils of early growth.

A congener of *Haltica nemorum*, by name *H. fuscicornis*, did much damage in the neighbourhood of Newbury and some other districts to the young plants of Saintfoin, as recorded in the "Entomologist" of April, 1871. The beetles pursued the same plan as do the enemies of the Turnip, fastening themselves upon the cotyledons and first leaves as soon as they appear. In this species the head and thorax are of a dingy red colour; the wing-cases, which are shining, are dark green, shading into black in some specimens. The insect was known to Linnaeus, and is described by him; but is much better known by the name of *rufipes*, given by De Geer, and adopted by the English entomologists of last century.

Since my paper was written in which some account was given of a new pest found upon the Vine (*Peritymbia Vitisana*), my attention has been called to a report of a meeting of the Scottish Meteorological Society, in which it is stated that in the course of a discussion on the bearing of meteorological science upon farmers, it was suggested that this insect was probably transported hither from America in the first instance, and the mode indicated was by means of a journey through the air, the strong westerly winds being accused of conveying the spores (or eggs?) across the ocean. I suspect this theory will be discovered to be baseless, though it is quite probable the species might have travelled from the New World to the Old, but in a different way, attached to some material object on *terra firma*. It must also be remembered, that it does not follow of necessity because an insect suddenly appears in profusion where it had not been observed before, that it must have been imported to the country. Other explanations are possible and plausible.—J. R. S. C.

SENSATION IN PLANTS.—M. Figuier believes that a plant has the sensation of pleasure and of pain. Cold, for instance, he says, affects it painfully. We see it contract, or, so to speak, shiver under a violent depression of temperature. An abnormal elevation of temperature evidently causes it to suffer, for in many vegetables, when the heat is excessive, the leaves droop on the stalk, fold themselves together, and wither; when the cool of evening comes, the leaves straighten, and the plant resumes a serene and undisturbed appearance. Drought causes evident suffering to plants, for when they are watered after a prolonged drought they show signs of satisfaction. The Sensitive Plant, touched by the finger, or only visited by a current of unwelcome air, folds its petals and contracts itself. The botanist Desfontaines saw one which he was conveying in a carriage fold its leaves while the vehicle was in motion, and expand them when it stopped—a proof that it was the motion that disturbed it. Sensation in plants is of the same kind as

in animals, since electricity kills and crushes them as it does animals. Plants may be also put to sleep by washing them in opium dissolved in water, and hydrocyanic acid destroys their vitality as quickly as it does that of animals.—(*Mechanics' Magazine.*)

THE BEDDING-OUT IN THE LONDON PARKS.

THE present season has been in some respects unfavourable to the production of effective displays of bedding-out plants. After an unusually mild February there came a cruel biting March, followed by destructive frosts in April and May, and heavy rains in June. Accordingly planting-out could not generally be accomplished so early as usual; the flowers were beaten off by the heavy rains, and the cool moist weather was more favourable to the development of luxuriant foliage than to the production of an abundance of flowers. Owing to the weather and other causes the bedding plants in the London Parks were this year turned out exceptionally late, but when the work was commenced it was carried on with such energy and order that the whole was completed in a fortnight, and the results obtained, despite all the drawbacks referred to, are worthy of all praise; indeed some of the arrangements excel those of last year in tastefulness, while the general effect is at least equally good.

Taking Hyde Park first, for there it is that the principal combinations are to be found, we shall start from the lodges at Stanhope Gate on the Park Lane side, and travel in the first place towards the Marble Arch. The lodges are covered with climbers, among which *Clematis Jackmanni* is flowering gaily, and the window boxes are enlivened by a profusion of flowers. From this point the beds on the right hand are all oblongs, alternating between the Plane trees by the side of the park railing. These are all margined with *Lobelia White Perfection*, and edged with *Golden Feather Pyrethrum*, within which is a band of *Sportsman Verbena*, a free-flowering, rosy-purple variety. This combination is very pleasing, especially the *Verbena* with the *Golden Feather*, while the *Lobelia* forms a dwarf close hedge covered with pure white flowers. The centres of the beds are *Gaines' Yellow Calceolaria*; *Pelargonium Lucius*, one of the best of the rose scarlets; *Cybister*, very good; *Waltham Seedling*; *Madame Vaucher*; *Glow*, bright scarlet, retaining its blooms for a long time, and forming a compact bed covered with an abundance of flowers; and the centre bed *Gaines' Dwarf Yellow Calceolaria*. The planting of the other half of the beds corresponds to that of the first half, being *Glow*, *Orange Nosegay*, *Madame Vaucher*, *Waltham Seedling*, *Cybister*, and *Lucius Pelargoniums*, and *Gaines' Dwarf Yellow Calceolaria*, terminating at the South Street gate in a circle margined with *Sempervivum montanum* edged with *Mesembryanthemum cordifolium variegatum*, a very neat kind beautifully variegated with yellow. The beds in front next the main area of the park consist of alternate circles and oblongs rounded at the ends. The circles each contain a *Lucombe Oak*, and form pin cushion beds of blue *Lobelia* margined with *Sempervivum montanum*. The oblongs are margined with *Sempervivum tectorum*, the common Houseleek, edged with *Alternanthera magnifica*, within which are bands of *Stachys lanata*, *Purple King Verbena*, and *Crystal Palace Gem Pelargonium*. These beds are very effective.

Continuing from the South Street gate, on the right hand the beds are margined with blue *Lobelia* and *Dactylis glomerata variegata*, and edged with *Iresine Lindenii*. The effect of the blue *Lobelia* and the Cock's-foot Grass is peculiarly elegant, giving a light feathery appearance, while the compact line of the dark-leaved *Iresine* offers a strong but not violent contrast. In the centres of beds *Purple King Verbena*, dotted among *Queen of Queens* white-variegated *Pelargonium* has an excellent effect; and noticeable in others are *Pelargonium Rev. Joshua Dix* scarlet, very fine; *Mrs. Laing Nosegay*, very free-flowering; *Lucius*, good in all the beds where it occurs; *Cybister*; and *Abutilon Thompsoni* with *Centaurea ragusina*. We have now reached the large Elm tree on the left-hand side of the walk. Here there is an extremely fine series of beds, of which the central and two end ones are gorgeous masses of *Coleus Verschaffelti*, and the two beds between are of *Crystal Palace Gem Pelargonium* with the flowers picked off. All these beds are margined with the neat rosettes of *Echeveria secunda glauca*, edged with the rich lively-coloured *Alternanthera amena*, within which there is a band of *Centaurea*.

Proceeding onwards towards the Mount Street gate the beds on the right-hand side of the walk of course have the same

margin and edging as those on the same side before the tree is reached, and like them are planted with *Pelargoniums Christine*; *Nimrod*, rather strong-growing but bright in colour; *Amy Hogg*, not so good as usual; *Lord Palmerston*, very effective, quite a mass of bloom; and *Crystal Palace Gem*. The beds on the left-hand side are in pairs, and consist of eight oblongs, with two heart-shaped beds at each end. The heart-shaped beds are fine masses of *Alternanthera magnifica*, surrounded with *Gnaphalium lanatum*, then a row of cup-like plants of *Sempervivum Bollii*, and a margin of *Echeveria secunda glauca*. On the Park Lane side the margin and edging of the oblongs are formed respectively of *Sempervivum californicum* and *Alternanthera magnifica*, and in all the first row is blue *Lobelia*. The oblongs are planted with *Purple King Verbena*, mixed with various *Bronze* and *Gold* and *Silver*-variegated *Pelargoniums*—viz., *Golden Superb Nosegay*, a very good variety; *Mrs. John Lee*, fine dark bronze; *Creed's Seedling*, an excellent yellowish-green-leaved free-flowering sort; *Albion's Cliffs*, over-vigorous to suit its neighbours, but fine of itself; *Model*, *Crystal Palace Gem*, *Queen of Queens*, and *Luna*. The blue of the *Lobelia* and the golden leaves of the *Pelargoniums* combine well, and the only fault that could be found with this pretty arrangement was *Albion's Cliffs* having grown taller than the rest.

Between Mount Street and Grosvenor Gates we have fresh combinations, in which the long beds on the right have their ends swept out to correspond with circles of shrubs between them. *Golden Feather Pyrethrum* is used as the margin, and *Amaranthus melancholicus ruber* as the edging. These beds are filled with *Pelargoniums*, the central one with *Murillo*, a dark crimson variety with small trusses, but very effective; *Lucius*, *Gaines' Dwarf Calceolaria*, and *Rubro-cinctum Pelargonium*, free-flowering, but of rather tall growth. The beds on the other side are planted to correspond. On the left-hand side of the walk, right and left of the *Rhododendrons*, the beds are in pairs, four heart-shaped and two circular beds. The former are margined with *Mesembryanthemum linguum*, edged with *Antennaria tomentosa*, and planted with a finely-coloured form of *Coleus Verschaffelti*; the latter are margined with *Sempervivum californicum*, edged with *Gnaphalium lanatum*, and centred with *Alternanthera magnifica*. The oblongs are all margined with *Echeveria secunda glauca*, and edged with *Alternanthera amena*, which is very bright and perfect, and when the whole series of beds is viewed from end to end it is extremely effective, giving a glow of colour between the sober-tinted *Echeveria* and *Mesembryanthemum cordifolium variegatum*, which is planted as the first row. The central portions of the various beds are filled with scarlet, pink, and white-flowered *Pelargoniums*, alternately with silver and golden variegated kinds, from which the flowers are kept picked off, mixed with blue *Lobelia*, which has a charming effect. Among the flowering *Pelargoniums* *Mrs. C. Cundance*, pink, with a white eye, is a good dwarf kind, and *Wellington*, deep crimson scarlet, are noticeable, the latter in particular by its large trusses and free-flowering.

From Grosvenor Gate to the Marble Arch the beds are scattered more thinly; there is more turf as well as more foliage from the greater frequency of trees and shrubs. Among the most noteworthy are beds of *Excellent Pelargonium*, *Lord Palmerston*, *Cuphea platycentra*, and *Coleus Verschaffelti*, particularly an oblong of the last-named plant; surrounded with *Golden Pyrethrum*, with *Centaurea ragusina* next the grass. Two circles of white-variegated *Geranium Annie*, dotted over a ground carpeting of blue *Lobelia*, edged with *Iresine Herbstii* look very well, also two oblongs planted with *Centaurea ragusina* and *Coleus Baroness Rothschild* in alternate diagonal bars, with a margin of *Golden Feather Pyrethrum*. Other good beds are *Purple King Verbena*, mixed with *Pelargonium Queen of Queens* having the flowers left on, edged with *Iresine Herbstii*, several beds of flowering *Pelargoniums*, and two splendid ovals of *Coleus Verschaffelti*. Along the shrubberies *Stachys lanata* is used for planting the margin, and behind this are scarlet *Pelargoniums*, backed by the shrubs, which throw out the colour of the flowers well, or in other words, serve to enhance its brightness. Next comes a series of circles in which *Stachys lanata* is used for the marginal planting, and within this is a ring of blue *Lobelia*. Two of them planted with *Lantanas* are very fine. Those used are *Ne Plus Ultra*, rosy lilac, and *Queen Victoria*, white; a bed of *Abutilon Thompsoni* and *Iresine Lindenii* mixed is likewise very effective. Near the Marble Arch the series terminates with two circles of the showy yellow-flowered *Mesembryanthemum aurantiacum*,

and a figure-8 bed of Abutilon Thompsoni and Iresine Lindeni, edged with Lobelia, with Stachys lanata next the grass.

We had last year occasion to notice the beautiful order in which both the beds and turf are kept; and this year, under more disadvantageous circumstances as regards the former, owing to the frequent heavy rains we have had this summer, nothing can be more trim than the appearance of the beds, from which dead leaves and withered flowers are evidently carefully removed wherever needful, thus greatly enhancing their beauty; while to keep the grass so short and velvety as it is, must have involved careful attention and frequent cutting.

(To be continued.)

HEATING BY HOT WATER AND HOT AIR.

As your reporter of the horticultural structures, heating apparatus, and other exhibits of a like nature at Birmingham, allow me to answer the remarks made by Mr. Housman on the subject of heating by hot air, pages 110 and 111. Mr. Housman, apparently, is not well pleased that I did not make a more favourable notice of his stove and model in Stand 45. My reason for using the expression, "that no system of hot air has yet been invented in which all the heat has been extracted from the fuel in a stove and given up to the buildings to be heated," was because Mr. Housman, in a short paper explaining his system of hot air, seemed to claim its superiority over hot water, on the ground that it was more economical to heat air by direct action of the stove than to convey heat to houses by means of hot water. No doubt it was a truism, and liable to the remark made by Mr. Housman, "That's so, as a Yankee would say." What I wished to infer was, "that the relative merits of two heating apparatuses almost entirely depend on the amount of heat extracted from the fuel consumed, and that no hot-air system as yet invented is superior to hot water, unless the chimney is also utilised as a flue." I send Mr. Housman's paper for insertion in full

Remarks on a Plan for Heating and Ventilating Horticultural Structures by Hot Air.

Except in the case of small detached horticultural structures, for the heating of which the value and economy of stoves is recognised by many practical horticultural writers, the application of hot water for the production of an artificial climate appears to be accepted as the most desirable means of obtaining that end. For the causes of this acceptance we have not far to seek. The mobility of the heat supplied, as contrasted with the fixedness of heat supplied from the ordinary flue or stove; the capacity for an indefinite extension of heating surface at any required point; the absolute security from burning of the air; and the delivery of the heat at a low velocity, and at a low temperature from a widely-extended surface, afford good reason for the popular acceptance of hot-water apparatus. On the other hand, the crudeness of the idea of employing one fluid as the medium of conveying heat to another, which, up to a certain point, it is confessed is more advantageously heated directly; the cumbrousness of the apparatus, and in many cases the unsightliness of it; the necessity (if a series of houses are to be interchangeable) that each house shall be supplied with the maximum amount of heating surface the greater part of which generally lies idle in reserve; and the absence of any accurate provision for incessant supplies of fresh warmed air for winter ventilation, indicate that much yet remains to be done in perfecting the mode of heating and ventilating our horticultural structures.

The exhibitor of the stove and model, No. 874, Stand No. 45, has taken as his leading principles the following points:—

1st.—That a house intended to maintain an artificial climate must be as perfect in structure as possible.

2nd.—That an incessant influx of warmed fresh air must be provided for, and that the corresponding efflux (which represents loss of heat) shall be from the coldest air in the house.

3rd.—That the arrangements for affording this fresh-air supply shall be under absolute control, and not dependant upon imperfect glazing, or on "a trifle of top air left on."

4th.—That it is impossible that arrangements for ventilation fitted for summer weather can be rightly applicable to the reversed conditions of atmosphere existing in winter.

5th.—That in consecutive houses heated air can be distributed and apportioned with greater facility than heated water can.

In the model exhibited, the heat-supply ascends from a hot-air chamber, being driven from thence by pressure of the outer air—that is to say, entirely by the outer air, and not by currents from the interior, as in Polmaise.

The source of heat preferred by the exhibitor is the well-known brick Arnott's stove, with its heating surface widely

extended on the principle of the Gurney stove; and so placed in a shaft as to be kept at a low temperature by the velocity of the current passing over it. Increase of velocity of current is equivalent to an increased heating surface of lowered temperature.

The current of heated air, passing along an air flue, is delivered into the houses in varied quantities, through gratings regulated by hit-and-miss valves. This current can be made to pass over water at any point of its course.

By means of a similar hit-and-miss arrangement, a series of apertures on the level of the floor are opened to the outer air, to such an extent as will afford passages of efflux equal to the passages of influx through the gratings in the floor.

In houses of perfect structure, the opening of the communications with the outer air will absolutely regulate the influxes from the hot-air chamber. If opened to the fullest extent, the supply of fresh air will be copious and of a low temperature; if the means of exit are scant, the supply will be scant but of a high temperature.

A fall of the temperature of the outer air, or a rise of the temperature of the inner air, increases the velocity of circulation in the house. In Polmaise arrangements the circulation slackens as the house becomes hotter; so, too, in closed houses heated by hot water, the motion of the air becomes more sluggish as the house becomes hotter.

From the model exhibited it will appear how the air ejected from the hotter houses is utilised by passing it through cooler ones; also how, when the appliances for summer ventilation are called into play, and top air is given, the upcast shafts in the wall become downcast, and deliver cool air on the floor level, which can be mingled at will with supplies from the floor gratings, warmed and moistened, or otherwise.

The model, as arranged, represents a series of three houses—the one nearest the hot-air chamber being a late viney, the one farthest from it an early viney, and the centre one an intermediate house. The end houses communicate with the centre one by sluices at the bottom of the doors or partitions. All openings to the outer air in the end houses are closed. In the centre house the hot-air gratings are entirely closed, and a sufficient quantity of passages to the outer air are opened. As much dry warm air as may be needful being admitted through the gratings of the first house, it circulates, and, having no other means of exit, escapes through the sluices into the cooler house in the centre. Here it again ascends, and circulates, expelling a corresponding volume to the outer air. The remaining part of the current in the warm-air flue passes on under the closed gratings of the centre house, absorbing moisture from troughs of water placed in its course, and is discharged in the early house, there ascending and circulating, and then passing into the centre house, and from thence to the outer air.

I do not agree to Mr. Housman's remarks "on the crudeness of the idea of employing one fluid as the medium of conveying heat to another." Water is such an infinitely better conductor of heat than air, and has the power of storing up so much heat, that with the advantages it possesses, which Mr. Housman has so well enumerated, and which I need not repeat, there is no crudeness in the idea, but scientific knowledge, in utilising water for the conveyance of heat, especially where the heat is wanted at a comparatively low temperature, so that for plant structures hot water will assuredly always hold its own. I will, however, examine his five principles.

First is a truism. In No. 2, the word which represents loss of heat (casually introduced in brackets), is the really weak point in his plan. If the influx of heated air is made to depend on the efflux of cold air, and as Mr. Housman speaks of the heat being extracted from the Gurney stove by means of the velocity of the currents, there must be a proportionably rapid loss of heat through the air, which passes according to his theory into the outer air.

No. 3 I will also agree to, but I totally dissent with regard to No. 4, as a house may be constructed with a system of ventilation equally adapted both for summer and winter.

No. 5 I also deny the truth of, because there is nothing so easy or so certain as to apportion the quantity of piping to the size of the houses and temperature required. Practically speaking, with any hot-air system where the heated air is regulated by outer air, the quantity of air supplied is very much dependant on the force and direction of the wind, and nothing would prevent cold currents of outer air forcing themselves into the house through the series of apertures Mr. Housman speaks of on the level of the floor, if there were any pressure of wind, especially if it happened to blow directly upon the house in the position where the openings were.

The source of heat is the brick Arnott's stove with its heating surface extended by means of gills of iron. Now the fire has to heat the inside bricks, then to heat the iron, which

iron is to be cooled down by the rapid circulation of air; at least, this seems to be the principle on which Mr. Housman depends upon for extracting the heat from the stove. Now, air is such a bad conductor of heat that it would never extract enough heat from the iron to keep it at a low temperature; and although currents of moistened air are capable of conducting and extracting more heat than dry, yet it is impossible to get cold outer air completely saturated with moisture merely by evaporating pans, and there must always be a great waste of heat to have to heat the iron envelope by means of a thickness of brick, though, no doubt, the brick acts its part in storing up heat after the fire is out.

In his description of the circulation of air in his model houses, Mr. Housman seems to forget how rapidly air parts with its heat by evaporation, and that on a clear winter's night not only would the moistened heated air part with its moisture and be condensed as it rose against the top glass; but it would cool so rapidly and lose so much of its volume by contraction, that I should be very sorry to have to rely on his currents of air to keep out frost from the third house.

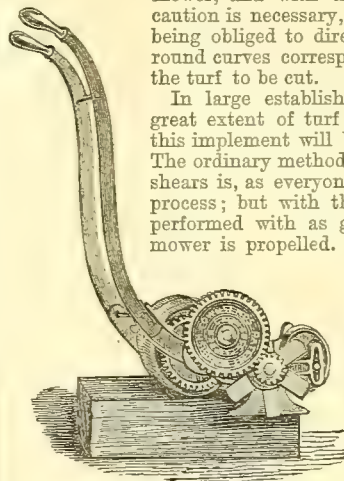
Mr. Housman says in page 111, "I dismiss the flue at once. If made secure it is costly, and dangerous even then, exigent of supplies of moisture, and utterly incapable of adaptation to varying wants." Now, I do not want to advocate a flue against hot water, but as far as moisture is concerned it is just as easy to supply a sufficiency of moisture by means of a flue as by means of hot air, and I do not think the flue is to be dismissed so easily; nor do I agree with the dictum that heat required for draught is not available for heating purposes. There is no real economy of fuel in a tall shaft, it only insures more perfect combustion; and the reason why a tall chimney may be cold and a short one hot, is that there is a greater rapidity of draught through the taller chimney, so that the products of combustion pass more quickly through it; but if we want economy of heating power we require slow combustion and a slow draught. It is in this point that a properly constructed horticultural boiler is pre-eminently successful in extracting the maximum of heat from the fuel consumed—that the products of combustion coming directly in contact with the comparatively cool surface of the boiler have their heat extracted by the conducting power of the iron and water, the iron being kept cool by the water, and the greater the difference between the temperature of the iron and of the heated currents of air that impinge upon it the more rapidly it conducts the heat or extracts the heat from the products of combustion.

Mr. Housman ends, "It seems almost superfluous to observe that a stove of this kind, standing free in a shaft, and for ever swept by rapid currents of air, must yield up more heat than a boiler bedded in masonry." Here I totally differ in opinion from him. First of all, a boiler should not be bedded in masonry, but should have a flue all round it; and, secondly, just in proportion as air is a worse conductor of heat than water, so is the surface of the stove less liable to be cooled down by the air than the water. If Mr. Housman's gill stove were surrounded by a water-jacket, it would extract far more heat than by any method of currents of heated air, especially as the rapidity is rather imaginary, being solely dependant on the fact that as air is heated it rises, but the rapidity with which it rises entirely depends on the amount of heat it extracts from the stove. And lastly, Mr. Housman says, "Seeing how often hot-water pipes are for the sake of appearance sunk in flues beneath the floor, there seems to be no valid reason why such flues should not be used without the pipes." Now, though hot-water pipes are very often put into flues, yet it is entirely wrong to do so. Many persons overlook the primary law of heat, "that heat radiates equally in every direction," by thinking too much of the second—that is, "that heated fluids rise." An immense amount of heat is wasted where pipes are put under the floor in flues, by the heat which is absorbed by the flues themselves; and the same would be equally true where hot air is made to pass far through flues, especially flues with evaporating troughs, by which a great deal of heat would be absorbed. Mr. Housman must pardon me if in accepting his challenge to discuss the comparative merits of hot air and hot water I have expressed my opinions too freely.—YOUR REPORTER.

TOWNSEND'S TURF-EDGER.

As an adjunct to the lawn-mower, we know of none more valuable and useful than the turf-edger invented and introduced by Mr. Townsend, of Wimbish. In appearance it is exactly like the lawn-mower, but the cutting appliance, instead

of being a series of horizontally revolving blades, is composed of a set of radiating blades revolving vertically. The machine is propelled in the same manner as the lawn-mower, and with the same ease; but more caution is necessary, from the importance of being obliged to direct it in straight lines or round curves corresponding with the edges of the turf to be cut.



In large establishments, where there is a great extent of turf edgings, the adoption of this implement will be of incalculable service. The ordinary method of trimming with edging-shears is, as everyone knows, a long and slow process; but with the turf-edger the work is performed with as great rapidity as a lawn-mower is propelled.

We have ourselves used the machine, and therefore speak of it experimentally, from which we learn two things: the turf edgings must be level and even, as all good edgings ought to be. If otherwise, the revolving blades are apt to become clogged by protruding pieces of turf; and as it is not

turf the machine is intended to cut, but the overgrown grass, it is necessary that the edgings be even. The second caution is not to rush heedlessly in using the instrument, but to practise it with caution, till by a little experience the hand and the eye have been accustomed to direct the machine just to trim the grass, and no more.

We can strongly recommend Mr. Townsend's machine as being effective in execution, and a marvellous saving of labour, which in these days is an important consideration.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

XIPHION TINGITANUM (Tangier Xiphion). *Nat. ord.*, Iridaceæ. *Linn.*, Triandria Monogynia.—This magnificent Iris was discovered by Salzmann in 1825, in meadows near Tangier. Its flowers are pinkish-purple. Dr. Hooker says—"During my late visit to Morocco with Messrs. Ball and Maw, we first saw Iris tingitana on the dinner-table of His Excellency Sir J. Hay, at Tangier, where it was a most striking object. The specimens were from his garden, and we were informed that it was found wild not nearer than ten miles south-west of Tangier, near Laraisch. Thither one of our party (Mr. Maw) made two excursions, the first one in vain, but the second with success. Specimens, both from this source and from Sir J. Hay's garden, were sent to Kew, which flowered in May of the present year."—(*Bot. Mag.*, t. 5981.)

MUNTINGIA CALABURA. *Nat. ord.*, Tiliaceæ. *Linn.*, Polyandria Monogynia.—Flowers white. A handsome stove shrub. Native of New Grenada.—(*Ibid.*, t. 5982.)

LINARIA MAROCCANA (Morocco Antirrhinum). *Nat. ord.*, Scrophulariaceæ. *Linn.*, Didynamia Angiospermia.—Flowers pinkish-purple. Dr. Hooker discovered it last year, and thus notices it—"During my excursion to that country with Messrs. Maw and Ball, we collected no less than twenty species of this genus, amongst which the subject of the present plate was conspicuous in one district for its abundance and brilliant colour, adorning the cornfields in profusion in the province of Sectana, which skirts the greater Atlas in lat. 31° N. *L. maroccana* belongs to a large section of the genus, and is closely allied to *L. reticulata*, Desf., of Portugal and N. Morocco. The seeds brought home germinated freely and flowered in the Royal Gardens in June of the present year."—(*Ibid.*, t. 5983.)

GAULTHERIA FRAGRANTISSIMA (Most Fragrant Gaultheria). *Nat. ord.*, Ericaceæ. *Linn.*, Decandria Monogynia.—An evergreen greenhouse shrub, with white very fragrant flowers. Native of the Himalayan and Nilgherry Mountains. Dr. Hooker says—"It should prove a greater favourite than *Clethra arborea*, which it somewhat resembles in general effect, from its profuse flowering. The specimen here figured flowered with I. A. Henry, Esq., in April, 1869, and was considered communicated to us for figuring."—(*Ibid.*, t. 5984.)

ZAMIOCULCAS LODDIGESII (Loddiges' Zamioculcas). *Nat. ord.*, Aroideæ. *Linn.*, Monœcia Polyandria.—About fifty years

since Mr. Loddiges cultivated this plant, and named it *Caladium zamieifolium*. It is a native of east tropical Africa. Dr. Hooker says—"The genus *Zamioculcas* is confined to eastern tropical Africa. *Z. Loddigesii* was introduced into the Horticultural Gardens before 1828, probably by Forbes, and figured with a most imperfect description by Loddiges, who supposed it to be a native of Brazil. Nothing more was known of it till it was introduced from Zanzibar into the Jardin des Plantes at Paris, where it flowered in 1869, and was subsequently described and published by M. Decaisne, together with another, also Zanzibar, species, *Z. Boivinii*, which exists in the Paris Herbarium and has bipinnate leaves. Our plants were received from that indefatigable naturalist Dr. Kirk, F.L.S., now H.B.M. Vice-Consul at Zanzibar in 1870, and flowered in June, 1872."—(*Ibid.*, t. 5985.)

TRECVLIA AFRICANA (African *Treculia*). *Nat. ord.*, Artocarpaceæ. *Lin.*, Monœcia Monandria.—Dr. Hooker says it is "a very singular West African tree, closely allied to *Artocarpus* (which includes the Bread Fruit and Jack Fruit of tropical Asia). *Treculia* appears to inhabit the whole western coast of tropical

Africa, from Senegambia, where it was discovered by Heudelot, to Angola, whence it was brought by Dr. Welwitsch, who states in his 'Synopsis Explicativa' that the fruit is called 'Amendoas de Disanha' by the Portuguese, and 'Isa' in the island of St. Thomas. Specimens have also been sent by Dr. Kirk from the west shore of Lake Nyassa, gathered during Livingstone's expedition in 1861. The fruit is a foot or more in diameter, globose, and full of small elliptical nuts, with an eatable embryo, which are collected by the negroes and ground into meal."—(*Ibid.*, t. 5986.)

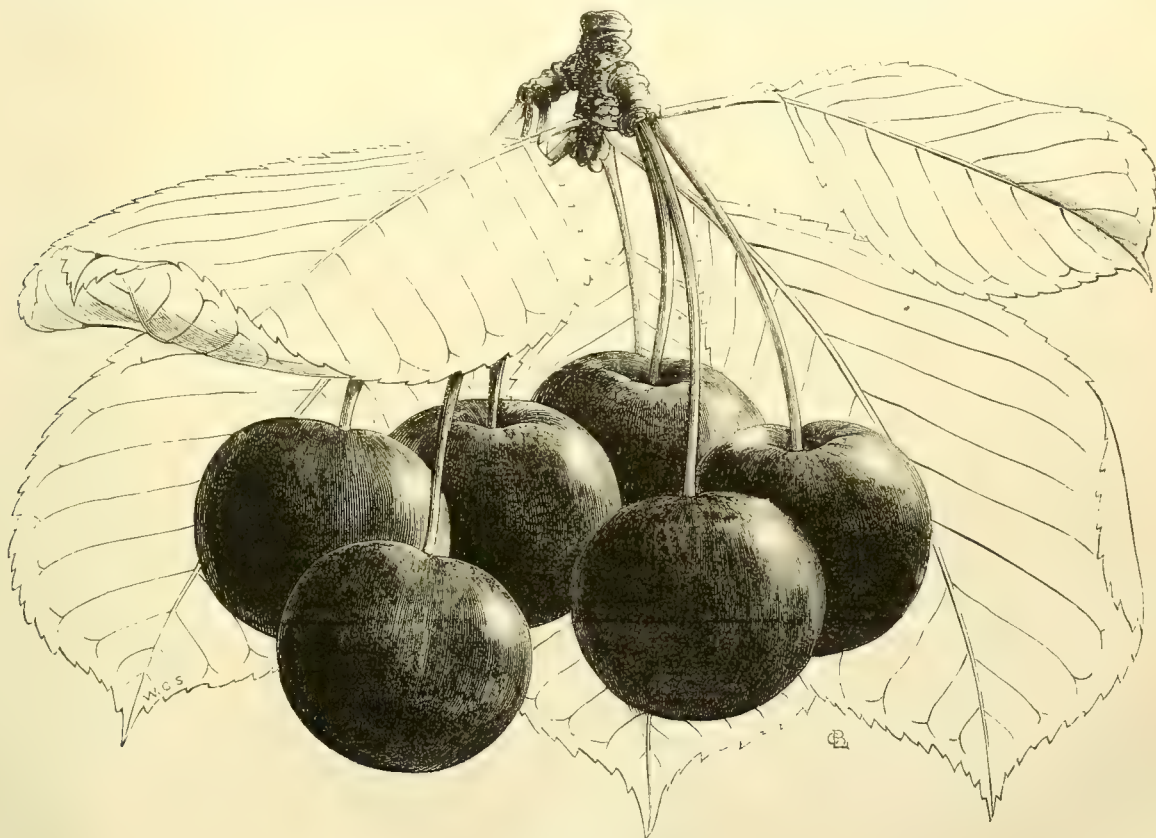
GLADIOLUS John Standish.—"This very fine variety of *Gladiolus* was raised by Mr. Douglas, the talented gardener at Loxford Hall, Ilford, and was exhibited in September, 1870, when it gained a first-class certificate. As shown, it was a flower of large size and fine form, and one of those in which the two opposite sepaline segments are uppermost, the two opposite petaline segments below; the flowers were also remarkably stout in substance. The colour was a pale flesh-like hue of remarkable delicacy, the lower segments being flaked with purple."—(*Florist and Pomologist*, 3 s. v. 169.)

SCHMIDT'S BIGARREAU.

This noble Cherry was introduced to this country by Mr. Rivers under the name of Bigarreau Noir de Schmidt. We have not been able to trace its history beyond the Société Van

Mons, of Belgium, from which Mr. Rivers received it. It is by far the largest of all the Black Bigarreau Cherries.

As will be seen from our engraving, the fruit is produced in



Schmidt's Bigarreau.

clusters, and is of a large size, round, and somewhat oblate. The skin is of a deep black colour, and there is a large style mark on the apex. The stalk is stout, 2 inches long, and

rather deeply inserted; flesh dark, tender, and very juicy, with a fine flavour. The stone is very small for the size of the fruit.

NOTES OF A WANDERER.—No. 2.—BASLE TO CHAMONIX.

If I have little doubt that my idea that the Germans are not much given to a love of flowers be correct, I can have less doubt on the condition of the Swiss in that respect; in no place that I have been have I observed the least indication of such a love. I inquired in vain for nurserymen, and on my return home, on looking at my friend Dr. Hogg's "Horticultural

Directory," I did not see a single nurseryman's name given in Switzerland. Why is this? Is it that the natural flora is so full that the Swiss care for nothing more? or that their scenery is so absorbing that they cannot give themselves to the minor things of gardening? I know not, but so it is. Here at Basle I saw no flowers; the fruiterers' shops contained no

bouquets; the decorations of the *table d'hôte* were of the poorest; and while in a French town of this size you would be sure to meet with some horticultural establishment worth visiting, I could hear of nothing of the kind. Well, I thought, we are going on to the capital, and assuredly there I shall find something worth seeing; and yet I was doomed again to disappointment. Hepworth Dixon speaks highly of the intellectual status of Zurich, proclaiming it to be the true capital, in all that pertains to mind, of Switzerland. I had no opportunity of visiting it, and so cannot say aught of its devotion to botanical or horticultural science; but I can say of Berne that I never saw anything more unworthy of science than its botanic gardens—poor miserable houses, in which dirty insect-infested and dusty plants struggled on through a feeble existence. Out of doors there were quarters of fruit trees, Roses, &c., that a fourth-rate nurseryman in England would have been ashamed to own. I asked whether they had any collection of Alpine plants. "Oh, yes." But such a collection! Even the Saxifrages and Sedums, so easily grown, were represented by miserable specimens, and I in vain searched for anything either new or rare. The same slovenliness pertains to other things at Berne. For example, what a miserable parody is the bear-pit! Surely if the Bernese are fond of their bears, and they seem to be as much so as the Baron of Bradwardine himself, they might be expected to have some worthy specimens of the hairy brute rather than the thin mangy animals they now keep. It was the same with some deer kept in one of the fosses. Poor brutes! one could only wish that they had one of the paddocks of our own Zoological Gardens, instead of being neglected and half starved, as they were here. We were detained here for some days, one of our party having, unfortunately, neglected to follow the advice of "taking their ices warm," and so we saw a good deal of the environs, went up to the Garten, and through their public park; but there were no wild flowers worthy of notice in the former, and certainly nothing in the latter in the way of horticulture.

The most charmingly-situated hotel I have ever stayed in is the Beau Rivage, at Ouchy; it stands on high ground, overlooking "the beautiful shores of Lake Lemang," as I have heard some one call it, and the grounds are charmingly laid out à l'Anglaise; but here, as elsewhere on the Continent, the difficulty is the watering. All the beds are mulched, and this does not give an air of neatness to them, especially when blackbirds and other birds will persist in hunting through them. And the beds are ingeniously watered: A pipe is placed half round the bed—this is pierced with small holes, from each of which a jet of water issues, and thus it is left for a time to do its own work; when that has been done it is shifted to the other side, and so the bed is well watered without any watering-can being used. The beds were laid out much in our style of bedding-out, and on the lawn were some nice specimens of Wellingtonias, Decodars, Catalpas, and other ornamental trees. Lausanne seemed to be well supplied with both vegetables and fruit, at least Cherries were both abundant and very fine, the Bigarreau especially good, and to be had for about 3d. a pound. It seems, however, that the same causes which have so diminished our fruit crops this year in England have been at work on the Continent; neither in those parts of Germany and Switzerland through which I passed, nor in France, did I see anything like the quantity of fruit that I have seen in former years. Walnuts, which are generally so abundant in Switzerland, were a very scanty crop, and Apples in France equally so, so that we cannot expect that the deficiency of our crop can be made up from these sources.

Leaving Ouchy for Martigny one gets out of the way of horticulture, and comes on the verge of Nature's gardening, and as we ascend from Martigny to the Alpine passes new beauties meet us at every step. At first we meet with the flowers familiar to us at home, but by-and-by new beauties greet our eyes. What is that brilliant blue in the pasture near Forclang? Surely it must be a Gentian; it cannot be verna, for it is too high up and too late for that. To jump off the mule and rush into the meadow is the work of a moment, and truly the whole field was brilliant with what I believe to be *Gentiana nivalis*; entangled with it was the lilac-coloured *Gentiana germanica*. As we ascended still higher the veritable Alpine plants surrounded us on all sides. What is it that gives that beautiful pink colour to the sides of the mountains? Surely it must be the "Rose des Alpes," *Rhododendron ferrugineum*. Yes, here are whole acres of real bedding-out of Nature's own doing, and how lovely it is—the deep crimson of the unexpanded buds, and the rosy pink of the opened

flowers! while the glades in the forests are filled with Ferns. And now we emerge from the forests and reach the summit of the Col de Balme, who can describe the glories of that view? The summit of the Alps surrounded by all his attendant aiguilles, and the valley of Chamonix lying nestled at his feet; and yet I was in doubt whether to look upwards at his glories, or at the beauties that lay under our feet, for this mossy Alpine pasture was literally studded with lovely masses of the beauteous *Gentiana brachyphylla*, the Alpine representative of *Gentiana verna*, and with still larger masses of what I had never seen in flower in its native habitat before, *Silene acaulis*. Those who have botanised in July in our own mountain ranges have, of course, seen it in abundance. Mr. Backhouse tells me that he has just seen it on the Helvelyn range, covering the mountains for four miles; but to me it was all new, and lovely indeed it seemed. On crossing the *mer de glace*, and in passing through the forest that leads to it, I came upon fine clumps of *Allosorus crispus*, of *Athyrium Filix-femina*, *Polypodium Dryopteris*, and other Ferns. Here was a gully down which the winter torrent had swept, now dry, but clothed with a garment of Ferns; here was a deep hole where water had lodged, and it, too, was covered on all sides with the same. Saxifrages, of course, there were of many kinds in the crevices of the rocks. Coming down from the Mauvais Pas, the quaint little *Sempervivum arachnoideum* was to be seen in all directions. But it were needless to detail the beauties one saw on every side, and I again felt that although there was enough, and more than enough, to satisfy anyone in the glorious majesty of the mountain scenery around, yet it did add to one's enjoyment to have an eye for those equally wondrous works of our Father which lay around one on every side.—D., Deal.

LONG GUN CUCUMBER.

HAVING both read and heard a great deal about this Cucumber, I had an inclination to endeavour to cultivate it on a small scale. I employed a lean-to flue-heated pit, which is 16 feet long and 4 feet wide. I purchased from Mr. Pearson, of Chilwell, four plants, which were very minute, having only seed leaves to be seen, and planted them June 7th. I began to cut Cucumbers July 12th, and have done so up to the present time, taking on an average ten Cucumbers per week from each plant, varying from 18 to 36 inches long, and some longer. Now I can count fifty, all ready to cut, quite as large as any I have had. Until my trial I had been given to understand this superior sort of Cucumber was very difficult to grow in houses, and almost useless in frames; but from this result I may safely recommend it for house or frame-culture—i.e., if you can keep up a bottom heat in the latter.—J. W., JUN.

THE DEW OF OUR GARDENS.

By CUTHBERT W. JOHNSON, F.R.S.

WE are all aware of the value of the moisture which bedews our plants and soils. We act upon the limited knowledge we possess with regard to its origin, but we find many mysteries relating to this beautiful phenomenon which we should like to unravel. Thus we remark that dew is not deposited on all plants alike, or even upon the various soils on which they grow. I have long observed this in the case of some Oak and Wych Elm Trees growing by the side of my lawn at Croydon. Under the Oak trees the dew on the grass is generally copious, but there is rarely any on that beneath the Wych Elms. In some districts of England the farmers are wont to plant Oak trees around their sheep ponds: has this any connection with the fall of dew under these trees? The amount of water annually deposited by dew is equal to about 5 inches. Indeed, as Mr. Josiah Parkes long since observed (*Jour. Roy. Ag. Soc.*, vol. v., p. 132), every observant gardener must have remarked that the amount of dew precipitated during the same night varies greatly on different soils in fallow, and still more on the leaves of different plants. Well-pulverised soils attract much more dew than those which are close and compact. The cultivator, therefore, is wont to keep the surface of the soils on which his crops are growing pulverised even in the driest weather.

The richest soils absorb more of the insensible moisture than the inferior. Davy determined this experimentally. He found that when a given quantity of a rich soil, dried in a temperature of 212°, absorbed eighteen grains when exposed for an hour to the air, the same amount of the soil of Bagshot Heath absorbed

under similar circumstances only three grains, and as he remarked this power of soils to absorb moisture from air is much connected with their fertility, when this power is great the plant is supplied with moisture in dry seasons, and the effect of evaporation in the day is counteracted by the absorption of aqueous vapour from the atmosphere by the interior parts of the soil during the day, and by both the exterior and interior during the night (*Agric. Chem.*, 181.) And then with regard to the leaves of plants, it is worthy of more extended remark that leaves appear to act in somewhat different ways in receiving and depositing dew. A blade of grass is sometimes spangled over with dew drops, but it usually becomes wetted throughout its whole surface by the drops running together, and thus the water is conducted to the earth in minute streamlets; whereas the leaves of the Clover, Cabbage, Nasturtium, and many other plants will be found to collect dew in distinct globules, which may be rolled about on the leaf without appearing to moisten its surface. These drops, in fact, do not touch the leaf, but rest and roll upon a pillow of air interposed between them and the substance of the leaf.

The same remarks apply to plants growing in far warmer climates than our own; thus the repulsion of water by the leaves of certain plants, and by the feathers of water fowl, has been investigated by Dr. C. Buist (*Proc. Roy. Soc.*, 1857, p. 520). In some experiments carried on at Bombay with four varieties of Lilies and the Lotus, he found that from the upper surface of the Lily leaf the water runs off without wetting it, at it does off a piece of glass or greased surface. From the Lotus leaves it flows off like a pool of quicksilver, reflecting light from the whole of its lower surface. The repellent power is on the upper side of the leaf only. "On examining," remarks Dr. Buist, "into the cause of this, I found the Lotus leaf covered with short microscopic papillæ, which entangle the air and establish an air-plate over the whole surface, with which in reality the water never comes in contact. Another peculiarity connected with this was the singular respiratory pores of the Lotus. The leaves of the Lotus, when full-sized, are from a foot to 16 inches in diameter; on cutting off a leaf 6 inches broad, the stalk of which was less than the third of an inch in diameter, I was able to collect 33 cubic inches of air in an hour, when the vital energies of the plant must have been injured by its mutilation. At this rate a tank covered with Lotus leaves would produce daily an atmosphere 4 feet in depth throughout its whole surface. When the leaf is pushed slightly under water, a constant succession of air-bubbles seem to arise from it, at the rate of two or three a-minute at each spiracle. The air-bubble diffuses itself as it is extricated, presenting a very broad base to the leaf, and seems detached with difficulty. The air-plate all over the surface must thus become continually renewed, and the arrangement kept perfect. Sensible respiration is not at all essential to the repelling power of leaves; the most beautiful manifestation of it I have met with is in the *Pistia*, a little floating water plant abounding in our shallow tanks, and resembling common *Endive*. When pushed under the surface it looks like a little mass of burning silver. The same appearance is presented on Cabbages, young Clover, and a vast variety of other leaves; it is the cause of the bright pearl lustre of dew.

We are all aware that dew is derived from the condensation of the insensible vapour always present in the state of steam in our atmosphere, and that this is deposited on such plants or soils as are colder than that steam. This colder temperature, called the dew point varies, in different seasons. In the western side of our island the temperature of the dew point averages about 40° in January and February, gradually rises to about 58° in July and August, and descends to about 43° in December.

The varying amount of the aqueous vapour in the atmosphere is very noticeable. Around London a cubic foot of air contains on an average in January only 2.2 grains; 2.9 grains in March; and then it gradually increases to 4.8 grains in July. The amount then slowly decreases to 3.1 grains in December. This larger presence of moisture in our atmosphere during the warmest season of the year will hardly escape the reader's notice, or fail to excite his gratitude to our Heavenly Father who has thus arranged that when our plants are in summer most needing a supply of moisture, that then it is found in the greatest quantity in the air around them, and thus, when in the driest seasons other sources of supply are absent, this is the most copious.

KILLING WEEDS ON WALKS.—*Sedum acre* (Stonecrop), Grasses, and the like on carriage roads and walks I was troubled with

until I used gas lime from the gasworks. I applied it thinly with a shovel. It kills everything with which it comes in contact. I have not been troubled with those weeds for nearly three years. I prefer gas lime to salt; the smell of it is not pleasant at first, but it soon passes away.—A GARDENER.

SEARCH FOR THE VICTORIA REGIA.

Ovidos, January 16th.—Since my arrival on the Amazon I have inquired in each place and on board of all the steamers, of every one I met, where the *Victoria Regia* could be found. But the answers I received were anything but satisfactory. Everybody said there were great quantities of them. Some said it was not the season, and no one could say with any certainty where they were to be found; only the day before yesterday, talking with an old Englishman who had spent forty three years on the river, I ascertained that in some lakes near here the plant had been seen, and I resolved to find it or get my feet wet in the attempt. So, after much preliminary conversation, I embarked yesterday morning at 10 A.M., in a *monstaria*, in company with the Lieutenant of Police and the Notary Public of this town, two Indians to paddle, sardines, bread, cheese, and wine for the inner man, my Spencer rifle for unknown Amazonian monsters, and myself as chief of the party, and started on my search for the *Victoria Regia*, a fine specimen of which now stands before me in an immense china vase. I mention this fact at once, that you may not remain in any cruel suspense as to the result of our expedition.

The day was fine, and the clouds dense (cloudy days are considered fine on the Amazon); and our Indians sent our canoe swiftly along under the banks of the great river, stopping only once every five minutes to make an immense cigar out of native tobacco and *tacui* (the inner bark of a tree), which they gravely smoked while they paddled our light canoe.

The heat was intense, the air stagnant; clothes seemed insufferable, and my rifle increased in weight with every step; and still an Indian boy, our guide, pushed on, turning and avoiding the impassable parts as though every inch of the primeval forest was familiar to him.

Once we had to pass a muddy creek, over which extended the half-burnt trunk of a mammoth tree; the boy leaped lightly over, clinging to the trunk with his bare feet like a bird. I paused, looked around, across, below, where I saw the heads and vile little eyes of three alligators gazing hungrily at me out of mud and water in which they were lying, took my rifle in both hands like a balance pole, and pushed over, expecting every step that my muddy boots would slip, and I should be precipitated into the slime below. I should think we had gone on this way for a mile and a half when the boy said, "There they are!" and, looking ahead, I saw a large open space in the forest, covered with high grass. More eagerly I pushed on, gained the open, forced my way through the high grass to the shore of a small pond, and—Eureka!—the *Victoria Regia* lay before me.

In spite of heat, dirt, and fatigue, I did feel enthusiastic, and gave utterance to some exclamations, which, as nobody present understood, have not been correctly reported, and I spare you the inflection. What I did do, however, was to give the boy a knife, in case of alligators, and send him at once into the pond to cut with care a leaf, and bring it ashore, and then a bud. Flowers there were none open.

I will not attempt to describe it. 'Twould be in vain, and it has already been done; but, in examining the under side of the leaf, I saw at a glance how Paxton took his idea of the Crystal Palace from the structure of this leaf. After admiring sufficiently while the boy scraped the thorns from the stem of the bud (for both flower and leaf are abundantly provided with sharp thorns resembling the Thistle), I took my prize; and we retraced our steps, found our canoe, woke up our Indians, and paddled down stream towards home, which I reached about 5 P.M. hot, sunburnt, weary, my clothes soaked with perspiration, and hungry as a bear. I gave my bud to one of the girls, who put it in water, and after a refreshing bath sat down to dinner; and, while enjoying it, I heard a report behind me (where the bud was) like that of a gun—I mean a very small Potato pop-gun—and, lo! the bud had burst and was rapidly opening. In the course of half an hour it was a perfect flower of a pure white like our pond Lily, with the centre leaves of a rose colour gradually growing deeper till the centre was of a brilliant carmine; and, contrary to expectations, it had a most delicious fragrance, as nearly resembling that of a ripe Pine Apple as anything I can compare it to.

In the evening we had a great many visitors, who knew where I had gone, and came round to see what success I had met with. It does not take much to get up an excitement in these small places. I exhibited my flower with some pride, and was told that it was of a very rare kind, but smaller than the others. There are, as nearly as I can ascertain, three kinds. 1, Yellow with black centre, common and very large; 2, rose-coloured, common and but little smaller; and 3, the white

with red centre, which is like mine. I find they do not keep long. Mine this morning had lost the purity of its white leaves, and now exhibits quite a withered and dilapidated appearance; but, as it dries, red veins are making their appearance in the white leaves.

The size of mine when fully open was just about as large round as a large dinner-plate, and the stem the thickness of my thumb.—(*American Gardener's Monthly*.)

SHUGBOROUGH HALL,

THE SEAT OF THE EARL OF LICHFIELD.

It is much to be regretted that several of the finest of our country mansions are placed so low when more favourable sites are close at hand; as examples I may name Trentham in

Staffordshire, Port Eliot in Cornwall, Cobham Hall in Kent, and the subject of the present notes; for although there is some rising ground at but a short distance from the mansion,



Shugborough Hall.

it has not been made use of, except to erect a monument to the founder of the noble house who now owns it.

Shugborough Hall, the fine seat of the Earl of Lichfield, is situated on an extensive plain, through which the Trent flows in its serpentine course through the county of Stafford, and at this point not far from the centre of it.

There has been a lordly mansion here from Anglo-Saxon times, and the name then and since has been variously spelt Sowborough, Shutborough, and Shugborough. When Erdeswick wrote, "There were remaining the ruins of a goodly house, some time the Bishop's (of Lichfield and Coventry), and since then Lord Pagett's, who had the same, together with the parks of Heywood and Beaudesert," which he obtained by exchange from the bishop. Leland states that the ancient mansion, the ruins of which are above noted, was on the bank of the river Sow, which mansion belonged to "Suckbrow with a long beard." It is supposed that he gave the estate to the bishop. From the Pagetts it passed to the Ansons, who have long been resident in Staffordshire, but it was not until the time of James I. that they became possessed of Shugborough. It was then purchased by William Anson, Esq., great-grandfather of the celebrated circumnavigator, Lord Anson. The present possessor, the second Earl of Lichfield, is also Viscount Anson.

The mansion (of which the accompanying is a representation*), is very large; it is one of those Grecian buildings to which Corinthian columns, a prominent cornice and parapet, as well as other embellishments, give a classical character. Externally it has the appearance of being a stucco-cased house, painted white, but I believe the material is not white stucco nor plaster; but whatever it is, the mansion, surrounded by trees, has an air of importance which its large size on closer inspection tends to confirm. Unfortunately, as already stated, its position is low, although not more so than the generality of the park which surrounds it, and which may be compared to a vast plain well furnished with trees, especially towards its boundaries, and with the Trent flowing through it at a short distance from the mansion.

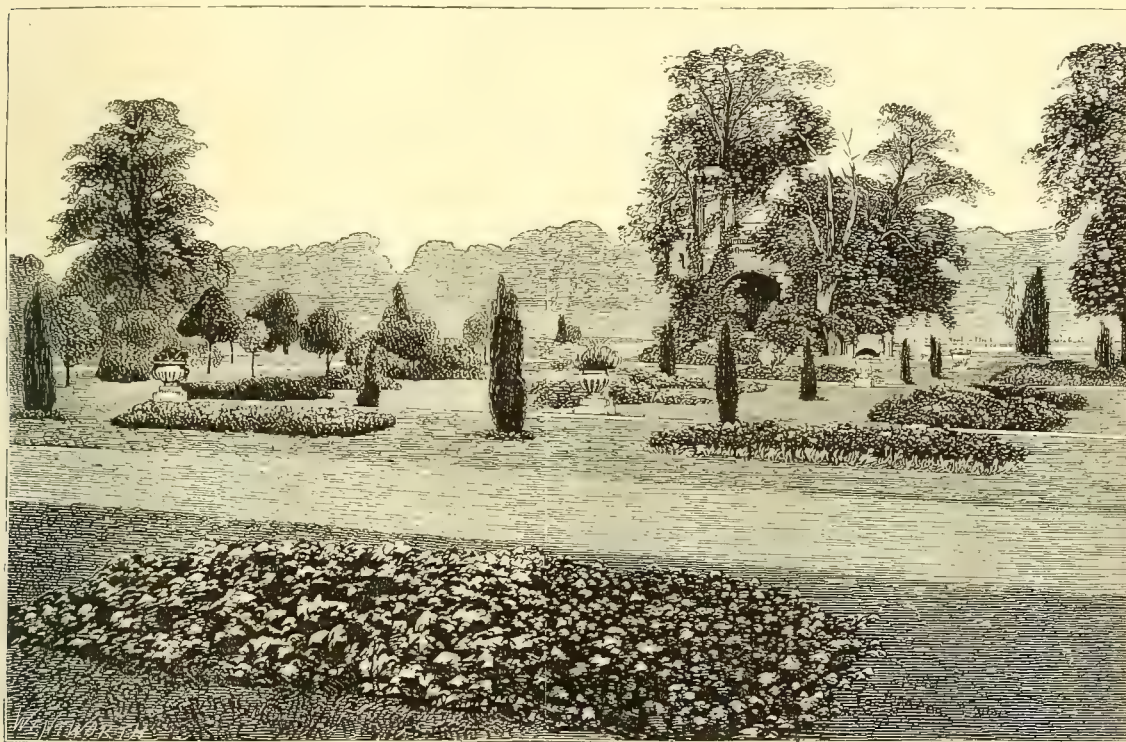
The approach from the highway from Rugeley to Stafford is through a noble entrance, from which the great size of the park is only partly seen, but can be conceived. Much of the adjacent country may be easily conjectured to be so much park, and rich meadows and fine healthy trees meet the eye everywhere. As we approach the house we find the carriage

* This and the view of the gardens are from photographs by Mr. Lapworth, of Stafford.

entrance is on the east side, all the others being surrounded with pleasure grounds, which, although mostly level, are nevertheless well diversified by the many features which give beauty to such a place. On one side is a neat geometrical flower garden occupying the whole frontage of the house, and extending to a piece of ornamental water which separates it from the park beyond. In another direction the lawn is well diversified with choice Conifers and other shrubs—for this fine place belonged to a patron of gardening at a time when it was much less fashionable than it is now: hence many fine trees and shrubs, which were far from plentiful at that time, were planted at Shugborough. Unfortunately, the situation being so low, it is not well adapted for many of them, as those extremely severe winters which visit us at intervals of ten or more years leave their marks behind, and such, I believe, has been the case at Shugborough. Nevertheless, I noticed one or two good examples of Deodars, Douglas Fir, some excellent

Thuja borealis, and other trees; but amongst shrubs the *Laurustinus* was said to have suffered frequently. *Rhododendrons*, on the other hand, were thriving well, and Oaks and most kinds of deciduous trees could not have been better, concealing the boundary wall of the park in an agreeable and irregular manner, and scattered in groups here and there all over the park, with now and then single trees of ample dimensions. Some interesting summer-houses were also suitably placed in the grounds; one, especially, contained a greater variety of curiosities than usually met with in an out-building. The whole of the grounds, including the walks, were in excellent order, and the flower-beds gay.

The kitchen garden at Shugborough is quite equal to the other features of the place; it is, however, some distance from the mansion, and, like it and the other dressed grounds, is situated on the level bordering the Trent. Good walls surround a large space; besides which there is a divisional wall,



Shugborough Hall Gardens.

against which some of the houses are placed, as well as the usual slips, one of which contains the frames and cold pits. The soil of this garden is a deep sandy loam, not so dark in colour as that which borders the Thames and Mersey, showing that in its constituent parts there is some essential difference, but it yields to neither in point of fertility. This hazel-coloured loam contains a sufficient proportion of sand to render it porous, yet not too much so to part with any excess of moisture which may fall. A few minutes' survey of a kitchen garden is often quite as interesting as a prolonged stay over some tropical or subtropical department. Beautiful form in vegetation is to be met with in the one as well as in the other. What kind of foliage, wherever it may come from, looks better than a good bed of Parsley? while a breadth of Rhubarb excels anything in its way that can be brought against it. Then, again, how well a few rows of Red Beet look!—even in the flower garden it is good; and not many Ferns excel the Carrot for gracefulness of form, while the Cabbage and Onion give a diversity of form fully equal to all their far-fetched rivals in the parterre can offer. Looking, however, at the kitchen garden in a utilitarian point of view, nothing could be finer than the appearance of the crops.

In the forcing houses good crops of Peaches had been gathered; Grapes were also excellent, not easily surpassed, the crop being also abundant. Some well-grown plants were in another house. There were altogether a good many forcing and plant houses very well contrived for general effect.

This garden was, I believe, remodelled about forty years ago, and in the early days of gardening periodicals it held an important position. Perhaps its greatest drawback is its low position, rendering it liable to suffer from both late and early frosts, as well as from winters of more than ordinary severity. In the past spring the blossom of the fruit trees both against walls and in the open ground suffered from this cause; nevertheless, on some trees there was a fair crop of Pears. Severe winters also tell their tale on vegetables, Broccolis suffering as much as anything; and in fact everything that must be left out of doors is liable to injury. These evils Mr. Prentice, who so ably superintends the garden, told me were of more frequent occurrence at Shugborough than at some other places but slightly more elevated; and this is very likely to be the case, the exhalations from a river causing a dampness which, in addition to the cold, tell seriously against vegetation. On the other hand, it is likely the heats in summer will be increased,

and this seemed to be the case at Shugborough by the forward condition of Tomatoes and other things requiring heat. Every nook, corner, and secondary path was in the best of order, as well as the more open spaces, the whole reflecting great credit on Mr. Prentice's management. The nearest station to Shugborough is Colwich on the North-Western Railway, but for postal purposes it is attached to Rugeley.—J. ROBSON.

WORK FOR THE WEEK.

KITCHEN GARDEN.

GROUND now becoming vacant should be trenched up as roughly as possible, manure being applied if necessary. This should always be done as soon as the crops are off, whether the ground is wanted again immediately or not, as it is an absolute loss of fertilising properties to allow it to lie unturned. Gravel walks must come in now and then for a share of attention in weeding and rolling. Let *Asparagus* beds be kept free from weeds, and a sufficient supply of seed saved for the annual sowing. Seedling *Cauliflowers* must not stand too thickly in the seed bed; the thinnings may be pricked out a sufficient distant apart, and they will make good stocky plants. The watering of *Broccoli*, *Cauliflowers*, and *Celery* must be diligently followed up. Sow Hammersmith Hardy Green *Lettuce* on sloping banks to stand through the winter. These banks may be rather small, not more than 4 feet through at the base, and steep. Sow both sides of the bank, and it will produce a succession. See that *Spinach* is properly thinned and the ground stirred. Make a good sowing of approved sorts of *Radishes* for winter use.

FRUIT GARDEN.

In the gathering and storing of fruit, Peaches and Nectarines should not be allowed to remain on the tree until they are what is technically called dead ripe. A little practice will enable a person to determine the degree of ripeness at which it should be gathered. Plums should be allowed to remain until perfectly ripe; the large amount of saccharine matter in the fruit acts as a preservative, and although something may be lost in bulk by its being allowed to remain on the tree, the flavour will not be deteriorated. Such as the *Impératrice* and *Golden Drop*, if protected from wasps, may be kept until a very late period in the season. Apples and Pears generally fall as soon as they arrive at an early stage of ripeness, and that period must be anticipated, and their removal effected as soon as it is ascertained. After gathering, the fruit intended for keeping should be laid out in the fruit room for a week or ten days, and exposed to a free circulation of air. The fruit will be found clammy from perspiration; it should then be carefully wiped and laid out thinly in the store room, which should, as soon as the fruit is introduced, be kept securely closed, and protected from material alterations of temperature. If Apples and Pears are gathered carefully without confusion, and at a proper period sorted, so that all defective fruit may be removed, and stored in the manner above described—if they are placed on paper so much the better—they may be preserved with very little loss, and found in a plump, high-flavoured condition throughout the winter.

FLOWER GARDEN.

Mowing and general cleaning must be well followed up at this moment, or much extra labour will be the consequence. Unless particular caution be exercised, many losses will arise from the frequent storms of rain and wind. See to the security of stakes and fastenings generally. Attend unremittingly to the propagation of stock for bedding next year. *Wistaria sinensis*, *Jasmines*, and the *Virginian Creeper* may be propagated by cuttings. *China Roses*, *Heartsease*, and the tree *Violet* may also be increased at this time. All spare time will now be profitably employed in the reserve garden, as success during the spring and summer depends in a great degree upon the efficient manner in which our labour is performed just now. Continue to propagate showy and choice herbaceous plants by cuttings and division of the roots, and seedlings of late-sown perennials may still be pricked out with advantage. Pot off a goodly number of the different varieties of *Brompton*, *Giant*, and *Queen Stocks*, likewise *Pentstemons*, *Antirrhinums*, *Linums*, *Viscarias*, &c., that they may have a little protection should the winter be severe. Continue to plant out *Pinks*, *Clove Carnations*, and rooted cuttings of hardy herbaceous plants into nursery beds. See that the plants already established in beds are kept in a state of health and vigour by stirring the surface of the soil. Look now and then

at the late-budded *Roses*, and loosen the ligatures when necessary. Pinch back to half their length those buds which have made shoots; if left at full length they are apt to be blown about by the winds. Remove all shoots and suckers from the stock; if left too long to luxuriate in their present position, they have a tendency to weaken the constitution of the stock. Those budded in 1871 will likewise require attention. See that the heads are well secured against the high winds which generally prevail during this month and the next.

GREENHOUSE AND CONSERVATORY.

Large conservatory specimens which have been retained within the house should be carefully looked over before the general collection is introduced, and thoroughly cleansed by hand-washing wherever the scale is detected. Orange trees particularly require this attention. Whatever pruning or training is required by climbing plants, the same opportunity of completing it should be used. Stands should be cleaned, and all the necessary repairs at once effected. As the plants from without are brought in let them be carefully cleansed of moss and all impurities, the drainage looked to, and each plant scrupulously freed from insects, dead leaves, and all unnecessary ligatures.

STOVE.

Stove specimens temporarily disposed in other houses should now be restored to the proper position, and should generally receive that treatment calculated to ripen their summer's growth of wood, and so prepare them against the injurious effects of our trying winters.

PITS AND FRAMES.

Some cold frames should now be prepared for the reception of alpine plants in pots, especially the more delicate species, to remain for the winter: this should be done as speedily as possible in case a wet season should set in, which is certain destruction to this humble but interesting class of plants. Previous to plunging them in the frames, water them overhead with clear lime water to destroy the worms which may have found a lodgment in the pots, or slugs that may be lurking behind the foliage. Remember that they must not be covered with the lights during fine weather, but only in times of rain. Continue to put in readiness structures which have been used during the summer months for winter stock, by white-washing the walls, cleaning the flues, &c. *Heliotropes*, *Verbena*s, scarlet *Pelargoniums*, and *Roses* required for decorative purposes should be progressively shifted, stopped, and trained. They will be found useful until a late period of the year. *Chrysanthemums*, *Cinerarias*, and *Primula sinensis* are common plants which cannot be put aside, and which amply repay any attention bestowed on their culture.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

So great has been the change in the fine weather for the harvest, when the carts could carry in the *Wheat* day after day without intermission, that we have had to water finely-pulverised soil before sowing our last *Cauliflowers*. We have sometimes sown in the middle of September, and the plants did us good service for the first protected crop early in spring, but on the whole, on our cold heavy soil it is as well to sow at the end of August. What will be our earliest have leaves as large as a threepenny-piece. These and *Cabbages* in seed-beds we have had to water and shade a little with a few evergreen twigs, as the sun was very powerful on them, for they were in an exposed place. We also watered *Lettuces* and *Endive* lately planted-out to get them to grow freely, as neither are of much use when stunted. We find that the *Potato* disease is worse in small gardens than we even suspected it to be. It will tell hardly on many a poor family.

Weeds have come up so thickly in some places that hoeing must be freely resorted to; and in such dry weather the loose surface will be a great advantage to all growing plants, as the ground, where unhoed, became very hard on the surface. The moist warm weather was good for the *Turnips*, and in many cases since the change of weather the plants as to tuber and foliage have made wonderful progress. As regards sowings for succession and for winter and spring use, we must refer to previous weeks.

FRUIT DEPARTMENT.

We nearly finished nipping, shortening, nailing, and tying for the summer, but as soon as possible we will go over *Currants* and *Gooseberries*, shortening them in a similar manner, as that perforce has as yet been neglected.

Strawberries.—As soon as the necessary layered runners are taken off we shall clean the beds and rows of Strawberry plants which we mean to leave, and mulch them with some not very rotten dung, which, in addition to other advantages, greatly tends to protect the plants in winter, more especially if they are in rows 27 inches apart; and if a little ridge is left in the middle of that space, that does much to keep the crowns of even rather tender kinds from being injured. We placed young plants in beds by themselves ready for potting, and amongst other work calling for attention, put many of the most forward in their fruiting pots.

A few simple things are essential to success. A clean pot, and enough, but not too much, drainage. The convex side of the first piece of crock should go over the hole to keep worms from getting in; the other few pieces should be placed with their concave side downwards, so as to leave the drainage as open as possible. A sprinkling of moss over the drainage, and a dusting of soot over that, will make the pots all that is desirable. The best soil is a fresh rather stiff loam, with about a seventh part of sweet rather dry rotten dung mixed with it. If the soil is more light and sandy than is desirable, and there is no other stiffer soil to mix with it, then a double quantity of dung will greatly contribute towards the desired result. When potted, the bud or heart of the plant should only be a little below the rim of the pot. In any case, but more especially if soil is at all light, it will scarcely be possible to make the soil too firm, first with the fingers, and then with a blunt round stick. The pots may stand shaded a little for a few days, but after that the more sun they have the better the plants will fruit.

Fruit houses in general have needed much watering, and paths and stages frequent sprinkling, to prevent the air getting too dry. Much time has been taken up in carting water.

ORNAMENTAL DEPARTMENT.

Walks.—We stated lately how we gave a fresh appearance to our walks for a temporary purpose, and much time has been taken to do them so effectually that they will need little more until next summer than a switch from a broom to remove leaves. There is nothing that is more wearisome than weeding walks when there is something like a carpeting of small weeds. One preventive is never to allow the grass near walks to grow so long as to ripen and shed seeds. Daisies, if uncut, would soon make a walk bordered with grass quite green at the sides. We have only had two or three small pieces at all bad this season, and the quickest way to get rid of all such annoyance is to give a coating of salt, just enough to make the ground white in fine dry weather, if the colour is no objection. Allow it to remain until the dews and rains help to dissolve it gradually about the roots of the weeds, and then give a thin sprinkling of fine sandy gravel. This, however slight, will render them firm under foot, and thus so far nullify the bad effects of softness and dampness in winter, which are apt to result when fine-surfaced walks are salted and no slight fresh surfacing given.

As stated some time ago, a rough-surfaced walk has advantages in winter, but it is unpleasant in summer when ladies attempt to traverse it with thin-soled boots. The most un-walkable walks we ever trod were in a very large fine place, but formed as they were of rounded pebbles from the river side, from the size of good cherries to fair-sized walnuts, the pebbles sank and rolled so under the sole of the boot that we were glad to get away from them, and more especially as "Keep off the grass" was carded up at every corner. Ere long we saw a beautiful bank of river sand, a slight surfacing of which over these rough pebbles would have made a walk smooth on the surface, and yet so open beneath that the surface would soon be dry after the heaviest rains.

To avoid these difficulties, so as to have walks serviceable at all times, some proprietors are resorting to stone pavement, others are laying them down with asphalt, and some of these who dislike the dark colour are fixing different-coloured spar, &c., on the surface of the asphalt, much in the same way as we used to fix enough of gravel and sand on a covering of tar. We hear all sorts of accounts of these walks, laudatory and condemnatory; and other persons, taking the safe medium, are waiting until they decide. Of course each plan has its separate advantages, but as pleasing to the eye, and neither too hot nor too cold for the feet, we do not think a well-kept gravel walk is yet to be despised.

Watering.—We have watered Roses and some other strong-growing plants, and we fear we shall have to water Calceo-

larias if dry weather continue. During the fortnight of thunder and pelting rains the Calceolarias and Scarlet Pelargoniums looked very badly, as bushels of the blooms of *Calceolarias* were washed off, and corymbs of Pelargoniums seemed drenched and rotted. However, this week they have been as we like to see them. There is one advantage in having good strong vigorous plants—that you can depend on successions of bloom as long as the season remains warm enough.

We had two notes about Calceolarias the other day, one complaining that after the first blooming a great portion of the plants died off. We cannot be sure of the reason, but we suspect this dying-off is often the result of dryness at the roots. We watered and mulched our Calceolarias in the tropical days we had, when we scarcely watered anything else in beds. We cannot say we have lost none, but so few have gone—perhaps a score—that their loss with our thick planting has never been noticed. The other case is a more troublesome one, and it is far from uncommon, though our correspondent imagines he is the only unlucky man. The plants succeed well at first, bloom well in June and the first part of July, grow but little until the middle or end of August, and produce little but green shoots afterwards, as flower-trusses do not form on the shoots. Our correspondent says he has scarcely had a bloom since August came in; the plants look healthy enough now, but exhibit little signs of flower-buds.

We should be happy to tell how to secure continuous blooming, but all we can do is to give a hint, and that only from a case that happened here some years ago. We planted-out good plants in the middle of May, they bloomed profusely in June and the beginning of July, but the weather being hot and dry they made little wood; after wet weather in August they began to grow freely, but the growth was succulent and produced few blooms. We came to the conclusion that the flowering tendency was exhausted too early, and then, just as in many other cases, the growth took the lead and kept it, and our autumns were too short to ripen the free growth. In the following season we saw symptoms of the same thing coming on. We had long satisfied ourselves that hardly any amount of sunshine would hurt a Calceolaria provided the roots were kept moist and cool. About the third week of June we forked the surface ground a little, gave a good mulching of rotten manure, and then a good watering. We wished to secure free blooming with continuous moderate growth, and the abundance of fresh shoots that broke, some terminated with their bloom corymbs, showed that so far the object was gained. Of course, we only give that as our opinion. It is certain that if by the above or other means free successional blooming is secured, it will be late in wet autumns before there will be many shoots without bloom. In warm seasons Calceolarias, therefore, may be the better for repeated waterings and mulchings, when other things do not need it. Blooming profusely now is the best security that the plants will continue good until late in the season. We can see now myriads of little shoots with the flower-buds peeping at the points.

We wish we could adduce more instances as proofs, but the one instance leads us to infer that to have continuous blooming, there must be no stunting of growth shortly after planting out; and that moderate well-ripened growth then, will be the best security against mere luxuriant barren growth later in the autumn.

Watering In-doors.—Hitherto this has been the easiest season we have had for many years as respects water, partly owing to the frequent showers and having more tank room. Now we are beginning to be more careful, as, to keep glass houses comfortable, a considerable amount of water is wanted to spatter floors and stages with. We must now as to watering act more strictly on the old rule, "Water so as to reach each fibre of the roots, and then just wait until the same process is wanted." In dull weather it may be wanted from two to four days; in bright weather, like this week, it may be wanted every day, and if fully exposed even twice a-day. A slight skiff from the syringe is a different affair, and refreshes the foliage, when the roots often would be all the better to have the earth slightly drier around them. When you must depend on rain water, what is used for syringing ought to be clear—filtered if possible. In making a tank to receive water from buildings it adds but little to the expense to make a double filter of brick and cement.

Neatness is one of the best means of making gardens thoroughly enjoyable. We know of several little places, patterns of neatness, where one never can find a thing out of place. We

have instanced several of these, such as Tingrith. In many larger places, before the gardener gives a degree of neatness to the half of the place, instead of going on he ought to turn back to the beginning. If gardening is to be a matter of enjoyment, we prophesy that all the pleasing eye parts must be less instead of larger. Nevertheless, it is not large places that offend alone in this way. Many of our amateurs lose an amount of enjoyment from the neglect of it. In a small garden at the back of a house in a street, we were astonished to find specimen plants in a warm border of the very best rarest of the Tricolor Geraniums, cornered with *Arabis lucida* and *Lobelia densa*. We know the hardworking owner of the place would often spend on that little place more than some proprietors of large gardens would spend on everything except labour. With a fine eye for real beauty he seldom comes down to the little niceties of neatness. The dirty earth-like little paths round his fine little beds, greatly marred the effect. Something like two barrowloads of fine sandy bright gravel would have quite altered the effect. The diamonds and pearls would have had something like a setting. We advert to this, because simple neatness is not always attended to by amateurs who in other respects are first-rate gardeners.

Japan Lilies.—It is only when we go into some amateur's garden of a few yards square, and yet containing all the best flowers of the day, that we can form an idea where the millions of plants in our nurseries ultimately find a home. In just such a little place we saw the centre of two beds filled with the best Japan Lilies, as *speciosum punctatum* and *rubrum*, and *auratum*. The best bed had the sides filled, so as to come gradually down to the pathway, with fine stubby plants of different-coloured Fuchsias in full bloom. The Lilies had a gorgeous effect over the Fuchsias, and the Fuchsias were so planted between them that when the Lilies waned the bed would still be a rich unique one. We think that the Lilies and Fuchsias were all in pots plunged, so that any proposed alteration could easily be made. In such small places planting, or rather plunging, in pots is a great advantage. Our friend spoke of having the Lilies plunged in the ground all the winter; but without entering into the question of their comparative hardiness, there is often too much damp in winter in these small back street gardens, so that we should recommend that the bulbs should be transferred in their pots to any cool dry place for the winter, and fresh potted and exposed to light as soon as growth commenced in the spring. Any cool place, as a cellar, however dark, would keep them safe, and without any trouble in covering up in winter.

Watson's Lawn Sand.—Years ago we said something about this sand, and we have had a number of inquiries; to save writing we wish to record our impression here. It is quite true that it kills all thick-leaved plants, as Daisies and Plantains—that is, that it turns the leaves black when used in the quantity prescribed. Used more freely, it seemed to kill the root outright; but used just as directed, though it made the leaves black and shrivelled them up, so that a broom could get rid of them, the roots in many cases threw up a fresh shoot some weeks afterwards. For small places it would be an easy mode of getting rid of such weeds; for large places the expense would be considerable. Its most striking property—and we were unbelievers until we tried it—is, that though it thus acts on the thick-leaved Daisies, Plantains, &c., it does no injury whatever to the grass of the lawn.—R. F.

TRADE CATALOGUES RECEIVED.

J. Veitch & Sons, Royal Exotic Nursery, King's Road, Chelsea, S.W.—*Catalogue of Hyacinths and other Bulbous Roots.*
F. & A. Dickson & Sons, 106, Eastgate Street, and Upton Nurseries, Chester.—*Catalogue of Dutch Flower Roots, &c.*
Sutton & Sons, Reading.—*Catalogue of Bulbous Flower Roots, Plants, Seeds, &c.*

TO CORRESPONDENTS.

* * We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to The Editors of the *Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them

answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

BOOKS (*A Constant Reader*).—"The Forester," by J. Brown, is the best book. You can obtain it from any bookseller. It is published by Blackwood and Sons.

MARKET GARDENING (*Baron*).—Our "Kitchen Gardening" and "Fruit Gardening" will tell you how to cultivate all the crops of a market garden. Which crops to select for cultivation must be determined by the demand in the market you send to. Eight pounds an acre is a high price, but might be justified by the business to be done. Near London it is usual to pay £5 per acre. The number of stocks of bees you could keep must be entirely guided by the bee-pasture of your neighbourhood, and as we do not know the neighbourhood we cannot give an opinion; but as you are near moors to which you could carry them, it is probable that you might profitably keep forty stocks. A yearly tenant must give six months' notice of his intention to quit, the ending of that six months to be at the period of the year the tenancy commenced.

TRAILING PLANT FOR AN ARCH (*E. P.*).—As it must be evergreen, plant *Crataegus Pyracantha* and *Hedera Regneriana*.

INSECTS ON DRIED FERNS (*E. Retford*).—Dust them with some of Pooley's tobacco. It is advertised in our columns.

PEARS FOR PYRAMIDS AND CORDONS (*Amateur*).—In East Yorkshire plant Jargonelle, Williams's Bon Chrétien, Louise Bonne of Jersey, Thompson's, and Monarch.

GATHERING PEARS (*W. J. S. H.*).—They are ready for gathering when they readily part from the spray if lifted above a horizontal position.

EVERGREENS IN POTS (*E. C. S.*).—We cannot answer your query. Visit the nurseries advertising in our columns and judge for yourself.

DUKE OF BUCKLEUCH GRAPE.—In Mr. Barron's report on this Grape (see page 149), in the eighth line, for 500 lbs., read 500 lbs.; and in the fifteenth line, for "not ripening berries," read *not ripening home*.

KALOSANTHES AFTER FLOWERING (*Amateur*).—The old shoots, or those which have flowered, should be cut back to within 2 inches of their base, and these will each produce two or more shoots, but they will not flower next year. Besides the flowering shoots there will be others that have not flowered, and these must not be shortened, as they will be the flowering shoots of next year. Report now, reducing the ball considerably, placing in the same or a less size of pot, and shift into a larger one in spring.

POLYGALA DALMAISIANA AFTER FLOWERING (*Idem*).—Cut the shoots back to within an inch of their base if the plant is as large as you wish; or you may cut some in rather closely and leave others twice the length or more, so as to produce a good head. Keep the plant rather dry until it has made shoots an inch or two long, and then report. It cannot have too light and airy a position in the greenhouse.

WINTER TREATMENT OF CALADIUMS (*Idem*).—Keep them in the warmest part of the stove, but not close to the pipes, as these are apt to dry the roots too much, overdryness being as great an evil as too much moisture. The soil should be dry, but not dusty dry. Either the pots should be set on a damp bottom, or have a slight watering once a week. The plants will need to be shaken out, potted, and started in a brisk heat early in March.

OLD PLANTS versus CUTTINGS OF PELARGONIUMS (*F. J.*).—The plants taken up from the beds in autumn, potted, and duly attended to throughout the winter will be larger, and on that account will make as good a display as plants from cuttings put in now. If you have plenty of cuttings and can raise all the plants you need by that method it is well, but they will not be finer than the plants taken up, only they may be wintered in less room. If your plants are old, say more than two years, the cuttings will be finer in foliage, for the old plants grow more weakly than cuttings.

WINTERING CUTTINGS IN BOXES (*Idem*).—Cuttings will not keep better, but quite as well through the winter in boxes as potted-off singly. The great advantage of having them in boxes is, that they take up less room, and if potted in spring the plants are as fine by planting-out time as those that were potted in autumn. You should put in the cuttings in boxes now, instead of putting them in in the open ground and transplanting to the boxes before frost. We shall put in ours forthwith and in boxes, setting them out of doors in the sunniest position we can command, and taking them in-doors before frost.

BEST BEDDING PELARGONIUMS (*Idem*).—Our correspondent wishes for a list of the best flowering and variegated kinds in their different shades, one of the best in each class. He would like our principal growers to send lists, similar to those given by our principal Rose-growers in the past spring.

SEMPERVIVUM CALIFORNICUM AND ECHEVERIA GLAUCA (*Idem*).—The former is quite hardy, but to stand the winter well it requires a dry soil. The *Echeveria* must be taken up before frost, potted in light poor soil, and wintered in a dry pit safe from frost.

CARNATION SOUVENIR DE MALMAISON (*M. D.*).—We suppose it is the tree Carnation of that name, bluish white, large and full flower. The plant in the pot we should remove to a light airy greenhouse about the middle of September, and it will, no doubt, flower during the winter. If the plant has flowered this year, it will not flower much again until the early part of next summer. A temperature of 45° to 50° is most suitable for flowering tree Carnations in winter. Remove the young plants from it to the greenhouse in September, and if well established in 6 or 7-inch pots they will flower well during the spring. They may remain out of doors, and will then flower in summer.

GRAPES ABORTIVE (*J. Carpenter*).—The Grape you sent is Gros Coulard, which always presents this appearance; and the variety you call Black Alicante, and which is, no doubt, Morocco, is subject to the same constitutional defect.

PRIMULA JAPONICA SEEDS GERMINATING (*W. Wormald*).—The seeds of this *Primula* germinate irregularly; the first plant appears in about two months after sowing, and some of the seeds will lie in the ground two years before they germinate.

PEACH TREES GUMMING (*T. H. T.*).—You may as an experiment graft the Peach trees as you propose. You may also graft a Peach shoot on a Nectarine, or vice versa. We think in your case, as the bark is also splitting, that the cause of gumming is to be sought for in an improper border. It may be too

rich or not well drained. Gummy is sometimes caused by injury to the bark from ties cutting it, &c. Syringe your Scarlet Runners well, give air abundantly night and day, and water well at the roots. They would do best out of doors at this season of the year.

HEATING A VINE BORDER (A. C. Cade).—If you want very early Grapes, say to be ripe early in April, it would be a decided advantage to have the border heated from hot-water pipes placed underneath, and if well managed we think it would pay. Failures have often occurred with heated borders, generally from overheating the pipes, and not giving the border sufficient water.

MANAGEMENT OF YOUNG VINES (A Cottage Gardener).—As each of your young Vines has made one strong shoot they will very probably bear fruit next year, but you ought only to take three or four bunches from each. Cut the canes back to about 6 or 7 feet from the ground. Do not allow water from the sink to drain into the border. You may drain it into a cesspool, and after diluting it with clear water apply it to the roots when the Vines are growing freely. Black Hamburgh is the most suitable variety. It is not true that the finest fruit grows farthest from the root.

SHOW-BOXES FOR ROSES (Cornubia).—The following are Mr. Reynolds Hole's directions for making them:—"Any carpenter can make them from 1-inch deal.

Length.	Breadth.	Height.
For 24 Roses, 4 feet.	1 foot 6 inches.	Back of box, 6 inches, front 4.
" 18 " 3 "	" "	" "
" 12 " 2 feet 2 in.	" "	" "
" 6 " 1 foot 6 in.	" "	" "

The covers, being $\frac{7}{8}$ inches in depth at the back, and 5 inches in front, 4 feet 1 inch in length, 1 foot 7 inches in breadth, and having a narrow beading within the four sides, half an inch from the bottom of the lid, overlap the boxes, leaving ample room for the Roses, and are secured for travelling by stout leather straps. Within the boxes some exhibitors have holes pierced at equal distances on a uniform surface of wood; but as Roses differ in size, it is more convenient to have the facility of placing them where we please, and for this purpose it is desirable to have strong laths (three-fourths of an inch in depth, and 1 inch seven-eighths in width) extending the length of the box. These laths should be six in number, and should be nailed on two strong pieces of wood, crossing the box one at each end, 2 inches below the surface. The upper and lower laths should be fixed one-eighth of an inch within the box, and the four remaining so arranged that there will be five interstices $\frac{1}{4}$ inch in width—three for the Roses, and two merely to reduce the weight. There will be a space of $\frac{1}{4}$ inch between the laths and the upper edge of the box, to be filled as follows: Cover the laths with sheets of brown paper, two deep, and cut to fit the box, and upon these place the best moss you can obtain. The Roses are placed in tubes of zinc $\frac{1}{4}$ inches in length, 2 inches wide at the top, gradually tapering until they become 1 inch in width at the centre, the tops being movable. This top is taken off, and the stalk of the flower being brought through until the Rose is held securely, it is replaced upon the tubes, previously filled with pure rain water."

PEARS ON NORTH WALL (F. H. Law).—Probably the Pears you name may bear fruit on a north wall in the north of England, but they will not ripen, and will only disappoint you. We think Morello Cherries and Red Currants the best fruit trees to plant on a north aspect.

PEAR TREE UNFRUITFUL (Idem).—You have evidently a late worthless variety, which you had better cut over, and re-graft with a sort that succeeds in your neighbourhood.

RATING MARKET GARDEN (L. M.).—We do not understand what you mean by "rates to the rector." He is entitled to tithe your market garden. Growing garden crops for sale constitutes the ground on which they are grown a market garden.

SENDING NUTS TO AUSTRALIA (S. B.).—Put them in a small cask in layers alternating with dry sand. We cannot give an opinion as to whether they will pay or even flourish, for Australia is a country including even a tropical climate.

MUSCLE PLUM FOR STOCKS (G. S.).—The best are raised from seed sown as soon as the Plum is ripe, in drills 2 inches deep, and a foot apart. In the autumn of the next year the saplings should be taken up, their tap roots shortened, and then planted in nursery lines, to remain one year, and then cut down to within two buds of the surface. One shoot of the next year is to be retained for budding or grafting on.

CORK FOR ROCKWORK (A Subscriber).—It has been advertised by the Lisbon Corkwood Company, 28, Upper Thames Street, London, and is supplied by many of the London seedsmen.

HOLLYHOCKS AT THE ROYAL HORTICULTURAL SOCIETY'S SHOW.—The cut spikes referred to at page 149 as taking the first prize, and which were ascribed to Mr. W. Chater, were shown by Lord Hawke.

HOT-WATER PIPES FOR EARLY FORCING (Bob).—For a viney 18 feet by 14, height of ridge about 20 feet, span-roof, you will require three 4-inch pipes to commence forcing the first week in November.

BOILER FOR SMALL CONSERVATORY (J. Smith).—We should ourselves prefer a saddle-back boiler from 24 to 30 inches in length.

GLASS FOR VINERY (E. C.).—The glass and size proposed will answer well.

BLACK MILDEW ON ROSES—VINEGAR TO ORANGE FUNGUS (Charles Smith).—The leaf sent is affected with black mildew or spot. It is the effect rather than the cause of disease, and arises from insufficient root action, so that the flow of sap is checked. Give the plants a good watering with liquid manure, and syringe with guano water 2 ozs. to the gallon, well stirred up, and only the clear liquid used after the mixture has been allowed to settle. We are not surprised at the foliage of your Roses being injured by the application of vinegar. We have tried a very weak solution of sulphuric acid and water. It certainly, like the vinegar, checks the mildew, and will kill the orange fungus, but unfortunately it kills the foliage as well. We have heard of buttermilk being successful as a cure; have any of our readers tried it? You need not be afraid of your trees dying from their losing their leaves from black mildew; they will start afresh if properly watered and manured. The alternation of temperature and very hot sun have been very trying for some kinds of foliage.

SEEDLING GERANIUM (J. C.).—The trusses are very large and the growth robust, but no one can judge of its merits as a bedder without seeing a plant growing.

FLOWERING CHELIDANTHEUS FRAGRANS (G. S.).—This increases so rapidly by offsets that it is difficult, as you say, to flower it. We do not know of any

treatment calculated to lessen the production of offsets. Probably your best plan will be to grow the offsets to a flowering size, and when they begin splitting up into offsets discard them. We have an idea that the tendency to break up into offsets is produced by too liberal watering and treatment. We should be glad of any information on the subject.

CUTTING LAUREL AND HOLLY HEDGES (Emerald).—If they do not require more than cutting off the irregular growths of the current year, the early part of August is a good time, and it may be practised now; but if the hedges are overgrown and need cutting-in severely to the old wood, it should be deferred until showery weather early in April, when you may cut back as much as you like, going over the hedges again early in August, and removing any irregularities of growth.

LILIUM SPECIOSUM (LANCIFOLIUM) AND GLOXINIAS AFTER FLOWERING (Idem).—Keep the Liliun moderately supplied with water in an open warm position, not removing the flowering stem or the stems, whether they have flowered or not, until they are quite yellow; then cut them away, repot the plants, and keep them in a cool house safe from frost with the soil no more than moist. After flowering, the Gloxinias should only have enough water to keep the leaves from flagging, and when these are withered cut them away with the stems, and set them in a house with a temperature of not less than 45°. They should be kept from becoming dust-dry, to prevent which the pots may be placed on a damp bottom, or be sprinkled with water once a week.

PROPAGATING COLEUS VERSCHAFFELTI, IRESINE LINDENI, AND CENTAUREA (G. F. R.).—The cuttings of the Coleus and Iresine should be put in now, taking off the growing points about 3 inches long and inserting the Coleus singly in 3-inch pots, the Iresine round the sides of pots or pans at about an inch apart. Both strike readily in a temperature of 70° if kept close, moist, and shaded. When the roots reach the sides of the pots the Coleuses should be shifted into 6-inch pots, taking out the points of the shoots, and be kept in a house with a temperature of not less than 50° at night during the winter, giving no more water than enough to keep the plants fresh. In March you may make cuttings of every available shoot, and in a hotbed they will speedily root. When they are rooted shift them into larger pots, keep them well stopped so as to have them bushy, and encourage growth by affording plenty of heat, moisture, and light, either in a frame with a gentle heat, or in a house ranging from 55° to 60° at night and 70° to 75° by day, and 80° or more from sun heat, admitting air freely. By May they will be fine plants. Harden them off gradually, and do not plant out before the first week in June. The Iresine should be potted off singly in 3-inch pots when well rooted, returned to the hotbed until established, then placed in a light airy position in a house with the winter temperature named for the Coleus, stopping the plants at 3 inches high, to cause them to branch. These will produce shoots in spring, but they should be potted and their growth encouraged, and they will be nice plants by May. Cuttings put in during March will also make good plants by May, but to secure these it is well to take up the old plants in autumn before frost, pot them, and winter them in a cool stove or warm greenhouse. They should produce a number of cuttings in February or March, and these, if potted-off, stopped, and grown in heat will be fine plants in May. All should be well hardened off before planting out. June is quite early enough. Of the Centaureas we like candidissima (aurea) the best. It may be raised from seed sown in a hotbed in March, potted off when large enough to handle or when the rough leaves show, watering carefully. If growth be encouraged the plants will be suitable for bedding-out at the end of May. All succeed in a compost of two parts sandy fibrous loam, one part leaf soil, and a sixth of silver sand; but use one part of silver sand for the cuttings, with a half-inch surfacing for the cutting pots for the Iresine.

NERINE CORUSCA NOT FLOWERING (O.).—The potting will not promote flowering, but a firm soil, and keeping the plant under-potted will do so. Repotting every second or third year is often enough. Good yellow loam is the most suitable soil. Keep the plant dry when it is at rest, but to prevent the roots drying up, set the pot on a saucer filled with sand, which should always be kept wet. When growing, water freely. A light airy position in a greenhouse is most suitable.

SEEDLING CARNATIONS FLOWERING (Idem).—The plants now showing for flower will bloom so late that we should remove the flower-stems. Allowing them to flower would weaken the plants. Their throwing up so early is not a good sign. We presume they are not true Carnations. If they are, take them up about the middle of September, place them in 6-inch pots, and in a house with a temperature of about 50° they will bloom finely. In their case the flower-stems must not be removed.

REMOVING GERANIUM LEAVES (Idem).—In removing partially-decayed or yellow leaves, take them off close to the stem. If left on, the stalk might decay and affect the stem.

ROSE CUTTINGS (Idem).—The cuttings now well rooted should be potted singly in 4-inch pots, return them to the cold frame, keep them rather close and shaded until they are re-established, then admit air freely. Before frost plunge the pots in coal ashes, and with the protection of mats over the lights they will winter safely in a cold frame.

KEEPING RIPE MELONS (A. B., Ireland).—We know of no means of keeping Melons after they are ripe, except putting them in a cool place, as an ice house. They will keep much longer if they are cut when they first commence ripening, and they are not much injured in flavour.

SELECT GOOSEBERRIES (Idem).—None of the large show kinds have thin skins. These are good—Red: Hopley's Companion, Guido, Prince Albert, Atlas, Huntsman, Top Sawyer. White: Whitesmith, Ostich, Sheba's Queen, Wandering Girl, Tallyho, Smiling Beauty. Green: Angler, Wistaston Hero, Elijah, Massy's Heart of Oak, Conquering Hero, Thumper. Yellow: Two to One, Margold, Broom Girl, Bank's Dublin, Teazer, and Husbandman. We are not aware that soil has any effect on the thickness of the skin.

GRUB ON FRUIT-TREE LEAVES (F. Appleby).—It is the Slimy grub, larva of a saw-fly, Selandria æthiops. Dust the trees with slacked quicklime.

INSECTS (A. R.).—The pretty two-winged fly sent is the common *Orthalis pulchella*. (T. Nicol.)—The young Fir shoots are attacked by the common *Hylurgus piniperda*, a species quite distinct from *Strophozomus Coryli* which you previously sent as one of the causes of the mischief in question.—I. O. W.

NAMES OF PLANTS (F. G. S.).—Sedum Cæpea. (Mrs. H. L.)—The Editors cannot name the varieties of florists' flowers. They are too numerous and too nearly alike to be distinguished from single blooms. (C. F.)—*Antennaria margaritacea*, and a Sedum not in flower—*S. Telephium*, or near it. (M. D.)—*Verbasum phœniceum*. (Downie).—1, *Gentiana Amarella*; 2, *Melampyrum pratense*; 3, *Montia fontana*. (Ella).—*A. Muhlenbeckia* (*Polygonaceæ*), probably *M. complexa* or near it. (J. C.).—1, *Elaeagnus borealis*; 2, *Nephrodium*

(*Lastrea*) Filix-mas; 3, N. (L.) dilatatum or spinulosum, but too young to determine. Fruiting fronds of Ferns should always be sent.

POULTRY, BEE, AND PIGEON CHRONICLE.

WATER FOR POULTRY.

REFERRING to Mr. Bruce's remarks in your issue of August 22, I beg to say that the fowls in all my runs have unlimited range in grass, all are fed alike, and the different lots are as nearly alike in age, breed, and every other particular as possible, with the exception before named—that one run has a stream of fresh water constantly passing through it, and I am not aware that the others get any water except when it rains and lodges on the surface. I did not say that the supply of water was the cause of fewer eggs, but that I had fewer eggs from that run where the water is. The question with me is, whether the fresh-grown grass (which the fowls are almost constantly eating, and which is nearly all water), compensates for the want of water in its liquid state, and answers the same purpose as if water were given to them.—J. F. P.

THE COMING WORCESTER SHOW.

My old acquaintance, Mr. John Martin, formerly manager of Lady Holmesdale's poultry at Linton Park, writes to tell me about the first Worcester Show, which is to be held on September 18th and 19th. Worcester is a place that should have such an exhibition, from its size and population, and the schedule shows a careful and good arrangement. There is this special inducement, the cups will be given in addition to the money prizes. This is a very liberal arrangement. Then the Corn Exchange is to be the place of exhibition, which is well, for the weather may be in another month unsuited for poultry being exposed night and day in a tent. I see there are to be two prizes for each variety of Hamburgs, making in all eight prizes; then, three for each variety of large fowls, and for Any other distinct variety, and two for the different Bantams. I hope the Polands will muster sufficiently to merit the three; they certainly ought to do, and Worcester is fairly central.

In regard to the prizes for Pigeons, I see there are two prizes for Any other variety of Tumblers, besides those for Almonds. The Any other variety should include, and it does doubtless, the Long-faced as well as the Short-faced. Thus the possessors of well-shaped flying birds will have an opportunity of showing their birds. The last thing I would remark upon is, that a cup is to be awarded for the best couple of dead fowls. This should produce an increase of numbers in this class, and surely poultry for profit ought specially to be kept in these days of dear meat. I am inclined to regard the schedule as quite a model, and such I hope will be the Show. Nothing I like more to attend than a first Show, and I shall try to be at Worcester.—WILTSHIRE RECTOR.

ROCHDALE POULTRY SHOW.

(From Correspondents.)

PIGEONS.

Pouter cocks, Red or Yellow, were a good class. Both prizes went to good birds measuring upwards of 19 inches in length, and 6½ inches in leg. In Red or Yellow hens, Mr. Horner was worthily first, and Mr. Fulton second and highly commended. In *Pouter* cocks, any other colour, a good Blue was first. In hens of any other colour, a Blue hen of great length of feather, with good legs and in perfect feather, was first. A very showy White, though rather too coarse in girth, was highly commended.

Carriers.—For cock birds, Black, good examples were first and second. In the class for Black hens I am sorry to say the Judges had to pass over a bird for being trimmed. The classes for Carrier cock of any other colour, and hen of any other colour, were represented by Duns. Young Carriers, bred in 1872, consisted of nine pairs of good birds, Captain Heaton taking the medal, second prize, and a high commendation for the best young pairs I have seen this year; they were good in all points.

Almond Tumblers were a good class, the first prize going to a pair such as is seldom seen. The hen is the most perfect-feathered one I ever saw.

In *Balds* or *Beards* the first prize went to a pair of young Blue Baldheads that well deserved their position. They were perfect in every point. Beards were second. For any other variety of Tumbler, Yellow and Red Agates that well deserved their positions were first and second, and an extra prize went to a pair of Red Rosewings.

For *Foreign Owls*, the prizes went to White and Blue respectively. This was a remarkably good class of ten entries. English Owls were a strong class of fifteen entries. First came a good pair of Blues, second Silvers, and Blues highly commended.

Barbs were represented by all colours, a good pair of Duns being first, Blues second, and Reds and Blacks highly commended.

Turbits were good.

Jacobins were a good class of all colours, the first and second prizes going to Yellows and Reds.

Antwerps were the best class of sixteen entries I have met with at any show except Birmingham. First, second, and extra prizes went to Red Chequers, Silver Duns, and Blue Chequers respectively.

Fantails were very good; the first prize went to Whites, the second to a splendid pair of carriage birds (Blues). Whites were also highly commended.

Blue *Dragoons* were represented by sixteen entries. Good birds were first and second, and an extra prize went to a nice pair. For any other colour, Yellows were first and second. Two pairs of brown-barred Silvers were shown, and not being up to the mark were passed over without a notice from the Judges.

In *Trumpeters* Mr. Fulton had it all his own way. Black Mottles were first, and Black second. These were two grand pairs of birds.

For *Any other Variety*, a pair of Ice in splendid condition were first, Blondinettes second, Red Magpies third, and a good pair of Blondinettes, when in condition, highly commended.

In the *Selling Class* Black and Yellow Balds divided the prizes.

I never saw a one-day show with so good a lot of Pigeons. Everything was done that was needed for their comfort, and too much praise cannot be awarded to the Stewards for the way they waited upon the Judges, and for the liberality of the Committee in giving extra prizes to any class that the Judges thought deserving of one.

RABBITS.

THERE were fifty-five entries in six classes, exclusive of the Selling class. The pens were large enough for one specimen, and if the wirework could be more conveniently arranged for easy removal of the Rabbits, all the better. The Lops, bucks, (five entries), were all good, and the Black specimen gives promise of great excellence, for he is large and well formed, of good carriage, and as he is only eight months and a half old he may be expected to be in more than one first position. The Sooty Fawn is also good, with length of ears and general form so desirable; and the highly commended pen and others were by no means much less attractive. The does (four entries), were also good, and the Tortoiseshell was worthy of her position; the Yellow-and-white was a fitting companion in honours. The remaining specimens in this class were also valuable and worthy companions to their more fortunate neighbours. The Lops as two classes were exceedingly good.

Silver-Greys (eight entries).—Amongst these were some presenting the true silver shade so desirable in this variety. The specimens were not quite so large as are seen at times, yet, as bulk is not the only requisite, other points of excellence were presented, rendering the prizewinners worthy of their position.

The Himalayan (ten entries), were an excellent class with few exceptions; but some of the specimens were unfortunately in a state of moult, and should not be forwarded for exhibition, for the extremities will then present anything but the deep dark shade so essential to their success.

The Angoras (eight entries), were an excellent class; some large, with that fineness and length of wool so essential, others less than five months old give evidence of great promise. All were clean and well groomed. They were white, with the exception of two young ones six weeks old, of a good strain evidently.

The Any other variety class (eleven entries), contained a splendid Patagonian as first prize, a Belgian Hare as second, and Lemon-and-white Dutch as highly commended.

The Selling class (nine entries), contained the usual variety, and some good specimens fully worth the 10s. fixed. The first-prize Angora, second-prize Lop buck, and highly commended Himalayan doe were all worthy their position. The length of the ears of the longest-eared Rabbit in the Show was 22½ by 4½ inches.

We would suggest that a little more attention be given to the rabbitry, more especially during hot weather, as regards the use of sawdust, and also that the interior of the ear be examined to detect the presence of gum.

SPANISH.—1, J. Leeming. 2, Birch & Boulter. Sheffield. *hc*, W. Harvey Sheffield. *Chickens*.—1, C. W. Brierley. 2, J. Walker, Standsford, Wolverhampton.

COCHINS.—Cinnamon and Buff.—1, W. A. Taylor, Manchester. 2, A. Bamford, Middleton. *hc*, H. Lacy. *Chickens*.—1 and *hc*, W. A. Taylor. 2, C. Sidwick. *Any other Variety*.—1, C. W. Brierley. 2, W. A. Taylor. *Chickens*.—1 and 2, W. A. Taylor. *hc*, C. Sidwick.

BRAHMAS.—1 and 2, H. Lacy. *hc*, T. F. Ansdell, Cowley Mount, St. Helen's. *c*, J. Watts, King's Heath, Birmingham. *Chickens*.—1, T. F. Ansdell. 2, W. A. Taylor. *hc*, H. Lacy (2). 2, J. F. Pickles, Birkdale, Southport.

GAME.—Cock.—1 and 2, C. W. Brierley. *Hen*.—1 and 2, C. W. Brierley. *Chickens*.—1, T. Dyson, Halifax. 2, C. W. Brierley. *hc*, A. Milns, Rochdale; H. Wynn, Martin Hussingtree, Worcester.

PARTRIS.—1, H. Beldon. 2, T. Wakefield, Golborn, Newton-le-Willows. *Chickens*.—1, J. Fearnley. 2, H. Beldon. *hc*, P. Unsworth, Lowton, Newton-le-Willows.

HAMBURGS.—Golden-spangled.—1, H. Beldon. 2, W. A. Hyde, Hurst,

Ashton-under-Line. *hc*, T. Walker, jun. *Chickens*.—1, T. Walker, jun. 2, W. A. Hyde.

HAMBURGERS—Silver-spangled.—1, H. Beldon. 2, H. Pickles. *hc*, Hon. Lady Tankerville, Chillingham. *Chickens*.—1, D. Lord. 2, J. Fielding, Newchurch, Manchester.

HAMBURGERS—Golden-pencilled.—1, H. Beldon. 2, H. Pickles. *hc*, J. Wrigley, Tonge, Middleton. *Chickens*.—1, T. Wrigley, jun. 2, H. A. Gill, Crawshawbooth, Rawtenstall. *hc*, J. Bewness, Newchurch. T. Wrigley, jun.

HAMBURGERS—Silver-pencilled.—1, H. Pickles. 2, H. A. Gill. *hc*, H. Beldon. *Chickens*.—1, Lady Tankerville. 2, H. Pickles, Earby. *hc*, Duke of Sutherland, Trentham.

HAMBURGERS—Black.—1, Stott & Pooth, Huntley Brook, Ryby. 2, H. Hoyle, Lumb, Newchurch. *Chickens*.—1, W. A. Taylor. 2, Lady Tankerville. *hc*, T. Walker, jun.; Duke of Sutherland.

DORKINGS.—1, Lady Tankerville. 2, E. Leech. *hc*, J. Stott. *Chickens*.—1, E. Leech. 2, W. Harvey. *hc*, J. Stott, Healey, Rochdale; Lady Tankerville. J. Watts.

ANY OTHER DISTINCT BREED, EXCEPT BANTAMS.—1, W. Harvey, 2, E. Smith, Timperley.

BANTAMS—Game—Hen.—1, W. F. Addie, Preston. 2 and *hc*, W. F. Entwistle, Westfield, Bradford. *Cock*.—1, W. F. Addie. 2, W. F. Entwistle. *hc*, G. Morling, Lynn; W. F. Entwistle.

BANTAMS—Any other Variety, except Game.—1, R. H. Ashton, Mottram. 2, E. Walton, Horncliffe, Rawtenstall. *hc*, R. H. Ashton; W. Harvey.

Rouen—Aylesbury.—1 and 2, E. Leech. *hc*, E. Smith, Passmonds, Rochdale. *Duck*.—1, T. Wakefield. 2, P. Unsworth. *hc*, E. Leech (2); P. Unsworth. J. Newton. 2, T. Wakefield. *Any other Variety*.—1 and *hc*, H. B. Smith, Broughton, Preston. 2, C. W. Brierley.

GESE.—1 and 2, E. Leech. *hc*, C. M. Roys, Rochdale. *Goslings*.—1 and 2, E. Leech.

TURKEYS.—1 and 2, E. Leech.

SELLING CLASS—Cocks.—1, E. Leech. 2, P. Unsworth. 3, J. Powell. *hc*, J. Butterworth, Rochdale (Dorking); C. W. Brierley. *Eggs*.—1, W. Harvey. 2, J. Powell, Bradford. 3, J. Walton. *hc*, C. W. Brierley. J. Featley, Lowton, Newton-le-Willows (Golden-spangled); E. Leech; S. Uttley, Rochdale.

PIGEONS.

POUTERS—Red or Yellow—Cock.—1 and 2, R. Fulton, Deptford. *hc*, E. Horner, Harewood; R. Wade. *Hen*.—1, E. Horner. 2, R. Fulton. *hc*, T. Waddington, Feniscowles.

POUTERS—Any other Colour—Cock.—1, E. Horner. 2 and *hc*, R. Fulton. *Hen*.—1, R. Fulton. 2, W. Stiles, Kettering. *hc*, E. Horner; W. Harvey.

CARRIERS—Black—Cock.—1 and 2, R. Fulton. *hc*, J. Stanley, Blackburn. *Hen*.—1, R. Fulton. 2, E. Horner.

CARRIERS—Any other Colour—Cock.—1, J. Stanley. 2 and *hc*, R. Fulton. *Hen*.—1, R. Fulton. 2, E. Horner. *Young Birds*.—1, 2, and *hc*, Capt. H. Heaton. (A very good class).

TUMBLERS—Almond.—1 and *hc*, R. Fulton. 2, E. Horner. *Any other Variety*.—1 and 2, R. Fulton. Extra 2, J. W. Ludlow, Birmingham. *hc*, J. Fielding, jun., Rochdale.

BALDS OR BEARDS.—1 and *hc*, W. Woodhouse, Lynn. 2, J. Fielding, jun. *OWLS—Foreign*.—1 and 2, J. Fielding, jun. *hc*, E. Horner. *English*.—1, T. Oddy. 2, W. Gamon. *hc*, J. Mangnall.

BARBS.—1, R. Wade. 2, R. Fulton. *hc*, J. Fielding, jun.; R. Fulton. (A very good class).

TURBITS.—1, W. Lumb, Brotherton, Rochdale. 2, W. Kitchen. *hc*, E. Horner; J. B. Pinder, Harpurhey, Manchester.

JACOBIENS.—1 and 2, R. Fulton. *hc*, E. Horner; W. Kitchen, Feniscowles.

ANTWERPS.—1 and 2, Extra 2, J. W. Ludlow. (A remarkably good class).

FANTAILS.—1, J. F. M. Marnock, Newark. 2, H. Yardley. *hc*, E. Horner.

DRAGONS—Blue.—1, W. Markland. 2, S. Green, Birmingham. Extra 2, J. Hetherington. *hc*, R. Fulton. *Any other Colour*.—1, J. Watts. 2, R. Fulton.

TRUMPETERS.—1 and 2, R. Fulton.

ANY OTHER VARIETY.—1, W. Kitchen. 2, J. W. Ludlow. 3, E. Horner. *hc*, J. W. Ludlow; H. Yardley.

SELLING CLASS.—1, J. Fielding, jun. 2, E. Horner. *hc*, W. Harvey.

RABBITS.

LOPE-EARED—Buck.—1, J. Hume. 2, T. C. & H. Lord. *hc*, W. H. Webb, jun. c. A. H. Easten. *Doc*.—1, A. H. Easten. 2, T. C. & H. Lord. c. H. Cawood.

SILVER-GRAY.—1, T. C. & H. Lord. 2, S. G. Hudson. *hc*, J. Irving. c. J. Irvine. T. C. & H. Lord.

ITALIAN.—1 and c. J. Butterworth. 2, S. Ball. *hc*, W. Whitworth.

ANGORA.—1 and 2, W. Whitworth. *hc*, J. Baron. c. J. Irving.

ANY OTHER BREED.—1 and *hc*, W. Whitworth, jun. (Patagonian). 2, J. Irving (Belgian Hare).

JUDGES—Poultry: Mr. R. Teebay, Fulwood, Preston. *Pigeons*: Mr. P. Eden, Salford, and Mr. H. Allsop, Birmingham. *Rabbits*: Mr. C. Rayson, Didsbury.

CHEPSTOW POULTRY AND PIGEON SHOW.

THE annual Exhibition of Poultry and Pigeons was held on the 21st, in the fine old ruins of Chepstow Castle. The entries numbered about 650; well-known breeders in different parts of England, and even Scotland, sending pens to compete for the prizes offered—fifteen silver cups, besides nearly 150 money prizes. The cup to the exhibitor of first-prize birds that had the most points was awarded to Mr. Fulton; the cruet-stand to the exhibitor of second-prize birds having the most points to Mr. Yardley; and the guinea extra for most points in third-prize birds to Mr. W. Crook. Our reporter adds, "The system of the exhibitors not knowing the numbers on their pens, and no one knowing the Judges, is an excellent plan."

BRAMA POOTRA—Light—Cock or Cockerel.—1, Cup, and 3, T. A. Dean, Marden, Hereford. 2, H. M. Marnock, Ryde, Isle of Wight. 4, Rev. J. D. Hoysted, Chippenhams. *Hens or Pullets*.—1, Cup, and Extra Cup, T. A. Dean. 2 and 4, M. Leno, Dunstable. Equal 2 and 4, Mrs. A. Williamson, Leicester. 3, Messrs. Hoare, Southampton. Equal 3, Mrs. A. Williamson.

BRAMA POOTRA—Dark—Cock or Cockerel.—1, T. F. Ansell, St. Helen's. 2, R. B. Wood, Uttoxeter. 3, H. Yardley, Birmingham. *Hens or Pullets*.—1 and Cup, H. Lingwood, Needham Market. 2 and 3, Rev. J. Bowen, Telgraph.

COCHIN-CHINA—Cinnamon or Buff—Cock or Cockerel.—1 and Cup, E. Lloyd, jun., Birmingham. 2, Miss Will, Errol. 3, H. Yardley. *Hens or Pullets*.—1, Miss Will. 2, T. A. Dean. 3, Mrs. A. Woodcock, Leicester.

COCHIN-CHINA—Any other colour—Cock or Cockerel.—1, H. Lloyd, jun. 2, J. Bloodworth, Cheltenham. 3, J. Nash, Walsall. *Hens or Pullets*.—1 and Cup, R. S. Woodgate, Tunbridge Wells. 2, H. Lingwood. 3, G. Lamb, Wolverhampton.

DORKINGS—Cock or Cockerel.—1 and Cup, Miss Will. 2, Mrs. Somerville, Raabon, North Wales. 3, H. Edmonds, Chepstow. *Hens or Pullets*.—1 and 3, Mrs. Somerville. 2, L. Dean, Chepstow.

SPANISH.—1, J. F. Sillitoe, Wolverhampton. 2, W. Hodgson, Bristol. 3, —Tonkin, Bristol.

FRENCH.—1, H. Feast, Swansea. 2, J. A. Lyne, Newport. 3, Rev. N. J. Ridley, Newbury.

POLANDS.—1 and Cup, J. Hinton, Warminster. 2, C. Bloodworth.

HAMBURGERS—Gold or Silver-pencilled.—1 and Cup, L. H. Ricketts, Barnwell. 2, W. Speakman, Nantwich. 3, J. W. Edge, Birmingham.

HAMBURGERS—Gold or Silver-spangled.—1 and 2, L. H. Ricketts. 3, T. May, Wolverhampton.

GAME.—1, J. Fletcher, Stoneclough. 2, H. E. Martin, Fakenham. 3, H. Feast. *BANTAMS—Game*.—1 and Cup, J. Mayo, Gloucester. 2, E. Davies, Worcester. 3, Rev. F. Cooper, Chippenhams. *Any other variety*.—1, M. Leno. 2, J. Bloodworth. 3, H. Feast.

SELLING CLASS—Brahmas, Cochins, or Dorkings—Cock or Cockerel.—1 and Cup, J. Bloodworth. 2, H. Lloyd. 3, L. Dean. *Hens or Pullets*.—1, J. Bloodworth. 2, L. Dean. 3, B. F. Parrott, Bristol.

ANY OTHER VARIETY.—Cock or Cockerel.—1, —Nash. 2, Capt. T. B. Cowburn, Chepstow. *Hens or Pullets*.—1 and Cup, J. Nash. 2, H. Vaughan, Wolverhampton. 3, F. Pettin, Bristol.

DUCKS—Aylesbury or Rouen.—1, Rev. J. J. Evans, Brecon. 2, L. Dean. 3, F. Davies. *Any other variety*.—1, W. Binns, Leeds. 2, G. S. Sainsbury, Devizes. 3, H. B. Smith, Boughton Preston.

GESE.—1, T. A. Dean. 2, W. Butt, Portskewett.

PIGEONS.

ARCHANGELS.—1, J. H. Watkins, Hereford. 2, W. Crook, Swansea. 3, H. Yardley.

ANTWERPS.—1, H. R. Wright, Birmingham. 2, C. F. Copeman, Birmingham. 3, H. Ryland, Birmingham.

BARBS.—1 and 2, R. Fulton, London. 3, H. M. Maynard.

CARRIERS.—1 and 2, R. Fulton. 3, F. Smith, Birmingham.

DRAGONS—Blue or Silver.—1, R. Fulton. 2, F. Graham. *Any other variety*.—1 and Cup, W. Crook. 2, W. H. Mitchell, Birmingham. 3, R. Fulton.

FANTAILS.—1, R. Fulton. 2 and 3, J. Walker, Newark.

JACOBIENS.—1, R. Fulton. 3, J. Thompson, Bingley.

NUNS.—1, J. Hawley, Bradford. 2, H. Yardley. 3, L. H. Ricketts.

POUTERS.—1, Cup, and 2, R. Fulton. 3, W. Crook.

ROUENS.—1, H. Yardley. 2 and 3, H. G. Holloway, jun.

TUMBLERS.—1, R. Fulton. 2, J. Ford, London. 3, J. Hawley.

TURBITS.—1, H. Yardley. 2 and 3, R. Fulton.

SELLING CLASS.—1 and 2, W. Crook. 3, A. A. Van der Meersch, London.

The Judges were Mr. R. H. Nicholas, of Newport, and Mr. J. Martin, of Worcester.

BIRKENHEAD POULTRY SHOW.

THE Wirral Agricultural Society held its annual Show at Birkenhead on August 21st. The entries of poultry and Pigeons were very greatly in excess of the number sent in any previous year, and the weather proving fine there was a great crowd of visitors. The poultry were on a platform at an easy distance from the ground, with the Pigeons on the top, and the whole was covered with a canvas shed, which added greatly to the comfort of the birds and also to the appearance.

The Pouters numbered fourteen pens, which call for no special notice. In Carrier cocks there were fifteen entries. Mr. Duckworth won with a splendid Dun which well deserved the cup. Mr. Wooley exhibited a beautiful Black which was very highly commended; in fact, there was scarcely a bad bird shown. In Carrier hens Mr. Taylor was first and Mr. Horner second. The Tumblers were a splendid lot, and not many times, even at Birmingham, have we seen such a good lot, more especially Almonds. Mr. Horner was first, Mr. Taylor second, and Mr. Waddington was awarded an extra second. There was a cup (£5 5s.) for the best pair of Dragons, which brought an entry of thirty-two pens—a most difficult class to judge. Mr. Wakem obtained the cup with his Blues, Mr. Graham being second with a promising pair of this year's black-barred Silvers, which would have made a good fight for the cup had they been a little further through the moult. In Dragons, Any other colour, Mr. Graham was first with a splendid pair of Reds, Mr. Mitchell second with Yellows. In Owls, Mr. Wakem won another cup for his Whites, which were in superb condition, Mr. Horner being second. In Turbits the prize birds were all that could be desired. Mr. P. H. Jones won in Fantails. Mr. Copeman and Mr. Justice took first and second with Antwerps.

In Nuns, the Rev. A. G. Brooke showed a perfect pair, which took first and were immediately claimed. In Any other variety, Trumpeters won. The whole of the birds were despatched by rail the same night.—A FANCIER.

DORKINGS.—1, E. Leech, Rochdale. 2, J. Cowbourn, Maesgamedd, Corwen. *Chickens*.—1, T. E. Kell, Wetherby. 2, E. Leech. *hc*, J. Watts, King's Heath, Birmingham. 3, Griffiths, Overton, Ruabon. c. R. Ravenshaw; A. Darby, Bridgenorth.

COCHIN-CHINA.—1, A. Bamford, Middleton, Manchester. 2, C. W. Brierley, Middleton. *hc*, F. Brewer, Lostwithiel; T. Stretch, Ormskirk. *Chickens*.—1, T. Stretch. 2, H. Lacy, Hebdon Bridge. *hc*, J. K. Fowler, Aylesbury; A. Darby, Bridgenorth. c. J. Watts, Birmingham; C. Sidgwick, Keighley.

BRAMA POOTRA.—1 and Cup, T. F. Ansell, Cowley Mount, St. Helens. 2 and *hc*, H. Lacy. c. J. Finchett, jun., Chester; J. Watts; Rev. N. J. Ridley, Newbury. *Chickens*.—1, T. F. Ansell. 2, H. Lacy. *hc*, Hon. Mrs. E. Hamilton, Ridgmont. *hc*, J. K. Fowler; T. Bennett, Shiffnal. c. H. Lacy; C. Morris, Holmleigh, Grassendale; G. Watson, Oak Vale, Old Swan.

SPANISH.—1, H. Wilkinson, Earby, Skipton. 2, W. Wooley, Bunbury, Tarporley. *Chickens*.—1, C. W. Brierley. 2, J. Walker, Standeford, Wolverhampton.

GAME.—1 and Cup, R. Ashley, Nantwich. 2, Duke of Sutherland, Trentham. *hc*, C. W. Brierley; G. F. Ward, Wrenbury, Nantwich. *Chickens*.—1, J. Wood, Wigan. 2, C. W. Brierley. *hc*, T. P. Lyon, Liverpool; J. Wood, Wigan.

BANTAMS.—1, G. Maples, jun., Wavertree. 2, R. Evans, Neston. *Chickens*.—1, W. F. Addie, Preston. 2, G. C. Barnett, Birkenhead. *hc*, J. W. Morris.

HAMBURGERS.—1, Duke of Sutherland. 2, W. Bullock, Prescott. c. H. Pickles. *Chickens*.—1, H. Pickles. 2, Duke of Sutherland.

ANY OTHER VARIETY.—1, J. J. Malden, Biggleswade (Crève-Cœur). 2, Rev. N. J. Ridley, Newbury (White Leghorn). *Chickens*.—1, J. T. Malden (Crève-Cœur). 2, C. Morris, Holmleigh, Grassendale (Hondans). c. Rev. D. C. Ewbank, Langford Vicarage, Biggleswade (Crève-Cœur); Rev. A. G. Brooke, Shrawardine, Shrewsbury (Malays).

DUCKS—Rouen.—1 and 2, R. Gladstone, jun., Court Hey, Liverpool. *hc*, G. Biddle, Moreton, Birkenhead; J. K. Fowler. *Any other Variety*.—1, E.

Leech (Aylesbury). 2, J. J. Walden (Black East Indian). *hc*, J. K. Fowler, Aylesbury.
GREYS.—1, J. K. Fowler; E. Leech. 2, J. Smith. *hc*, J. K. Fowler; E. Leech.
TURKEYS.—1 and 2, E. Leech. *hc*, C. Morriss; E. Jones, Park View, Neston.
LOCAL CLASS.—1, W. Dale, Thornton Lodge, Neston (Crève-Cœur).

PIGEONS.

PUTTERS.—Cock.—1 and 2, E. Horner, Harewood, Leeds. *hc*, T. Waddington, Feniscowles, Blackburn; G. J. Taylor, Huddersfield. *Hen*.—1, E. Horner; 2, G. J. Taylor. *hc*, T. Waddington; E. Horner.
CARRIERS.—Cock.—1 and 2, Cup, D. Duckworth, Wavertree. 2, G. J. Taylor. *hc*, W. Wooley, Bunbury, Tarporley. *hc*, J. Stanley, Blackburn; D. Duckworth; G. J. Taylor; E. Horner (2). *c*, J. O. Wakem, Liverpool. *Hen*.—1, G. J. Taylor. 2, E. Horner. *hc*, W. Wooley; H. Yardley; E. Horner.

TUMBLERS.—1, E. Horner. 2, G. J. Taylor. Extra 2, T. Waddington. *hc*, J. M. Brad, Cambridge. *c*, G. J. Taylor; H. Livesey, Preston; W. Woodhouse, Lynn, Norfolk.

DRAGOONS.—Blue and Silver.—Cup, J. O. Wakem. 2, F. Graham, Birkenhead. *hc*, J. Holland, Manchester (2); T. Moore, Birkenhead (2); W. Gamon, Chester. *c*, H. Chambers, jun., Northampton. *Any other Colour*.—1, *hc*, and *c*, F. Graham. 2, W. H. Mitchell, Birmingham.

OWLS.—Cup, J. O. Wakem. 1, T. Waddington. 2, E. Horner. *hc*, J. Fielding, Rochdale; G. J. Taylor. *c*, G. J. Taylor.

TURBITS.—1, W. Kitchen, Blackburn. 2, J. Fielding, jun.

FANTAILS.—1, P. H. Jones, Fulham. 2, J. Kemp, Haslingden. *hc*, H. Yardley; E. Horner.

BARBS.—1, J. Fielding, jun. 2, G. J. Taylor. *hc*, T. Waddington; T. Dearden, Bolton; H. Yardley; E. Horner.

ANTWERPS.—1, C. T. Copeman, Birmingham. 2, A. Justice, Salford. *hc*, W. Gamon (2); J. Stanley; G. J. Taylor.

NUNS.—1, Rev. A. G. Brooke, Shrawardine, Shrewsbury. 2, J. Watts, King's Heath, Birmingham.

ANY OTHER VARIETY.—1, P. H. Jones. 2, E. Horner. *hc*, W. Gamon; W. Kitchen.

The Judge was Mr. Tegetmeier, London.

STANNINGLEY AND FARSLEY POULTRY SHOW.

THIS, the best Exhibition ever seen in the locality, came off at Stanningley on the 24th. The Committee being a thorough working one, everything was conducted with precision, and the arrangements were such as it would be difficult to improve upon.

Spanish were of fair quality for the time of year. Of *Cochins* there were very good Buffs. The first prize went to adults, and the second prize to well-grown chickens. The *Brahmas* were also good. In *Dorkings*, very large and well-feathered chickens were first, and adults second. *Hamburghs* were not so numerous, but many very good birds, both old and young, were exhibited. The Spangled old birds won in both classes; but in Golden-pencilled, old birds were first and chickens second, as also in the Silvers, the winners in both classes being of rare merit. In Black *Hamburghs* the first were chickens of the highest quality, but the rest of the birds were not in the best condition. In *Game Bantams*, the most perfect pair of Duckwings we have ever seen were first, and though not in full plumage, these ran very close for the cup against the large *Game*. The second were Brown Reds, rather large, but good in other respects; and in the Variety class for Bantams both the winners were Blacks. In *Game* the entries were but poor, and many of the birds low in condition and out of feather; but the Duckwings, to which the cup was awarded, were very good in hand and correct in colour, the second-prize chickens were also very good. *Polands* were very fine, Golden winning both prizes and the cup for the best pen in the Show, *Game* excepted. The first-prize pair of Rouen *Ducks* were very good, but the rest only poor. In fancy *Ducks* a handsome pair of Bahamas were first, Kasarkas second, Brazilian Teal Ducks and Brown Call highly commended; and in the Variety class for poultry, Crève Cœur won both prizes.

Of *Pigeons* there were 130 entries in fourteen classes, and in some cases many more prizes might have been distributed deservedly. In Carriers both winners were Blacks, the first a splendid pair in faultless condition, and the second very good, but not so well made up for the show pen. Of *Putters*, the first were Blues, good in points; the cock 19½ inches, with 7-inch limb, and the hen 18½ and 6½; Whites were second, very good in style, but out of feather, the cock 18½ inches and 7 inches in limb, the hen 18½ inches and 6½, and a pair of capital Yellows were highly commended. In Short-faced Tumblers the competition was so close that the prizes could scarcely have been awarded wrongly among half the pens exhibited. Almonds were first and second. Tumblers, Long-faced, were very good; Red Mottles first, Black Mottles second, and Black Baldpates highly commended. Turbitts were a good class, but many of the birds moulting. The first-prize Yellows and the second-prize Reds were in faultless plumage and condition. English Owls were a moderate class, many of the birds out of feather; the first went to Blues and the second to Silvers. In Jacobins the winners were Reds, as good as can be, but most of the others rather coarse. Fantails were a splendid lot; the first-prize pair were not much more than half the size of the rest, and perfect in tail and carriage. In Barbs, the winners were Black, young and promising birds. Dragoons were a very uneven class, most pens containing one good bird. The best pair was passed over on account of the hen having been almost killed by the cock, her face and neck being fearfully swollen; these were shown by Mr. Yardley. Blues were first and Whites second. Trumpeters were good, but not in the best order. Short-faced Antwerps were very numerous, but mostly wanting in head and the win-

ning pairs (Blues) consisted of very good cocks with plain-headed hens. Long-faced Antwerps were a good class, many pens well deserving their position; the first prize was taken by Red Chequers, the second by Duns, though out of feather. In the Variety class were foreign White Owls, to which the cup for the best pen in the Show was awarded; Porcelain Swallows, Bagdad Carriers, Ice Pigeons, and other German Toys, and Black Swallows were very good.

Rabbits.—In Lop-eared bucks, the first prize went to a grand Sooty Fawn, to which the medal was awarded, and the second to a handsome Black-and-white, but not so long in ear. Does were longer and broader in ear than the bucks, but not so fine in quality; the first Fawn-and-white, and the second Fawn. Himalayans were good, the winners perfect in marking and condition. Silver-Greys were good, the two winners very fine in fur and capably silvered throughout, the first-prize Rabbit running a close race for the medal. In the class for Rabbits of any other variety, both winners were Angora, the first a very good one, and in capital fur. There were also some good Cage Birds, prominent among them being the Buff Belgian Canary, to which the first and extra prize were awarded, and also the two winning Parrots.

SPANISH.—1, H. Powell, Bradford. 2, J. Thresh, Bradford. *hc*, H. Harvey, Sheffield.

COCK-CHINA.—1, H. Harvey. 2, C. Sidgwick, Ryddlesden. *hc*, W. Mitchell, Birkenshaw.

BRAMA POOTRA.—1, H. Harvey. 2, W. Schofield, Bradford. *hc*, W. Schofield; J. Smith, Gilstead. *c*, W. Whiteley, Sheffield.

DORKINGS.—1 and 2, H. Harvey. *c*, J. Bailey, Earby.

HAMBURGHS.—Silver-spangled.—1 and 2, H. Beldon, Bingley. *hc*, H. Harvey. *c*, T. Fawcett, Baildon. Golden-spangled.—1, H. Beldon. 2, W. Appleyard, Ley Askwith. Silver-pencilled.—1 and *hc*, H. Beldon. 2, J. Preston, Allerton.

Golden-pencilled.—1, H. Beldon. 2, J. Smith, Gilstead. *hc*, J. Preston; T. Fawcett. *Any other Variety*.—1, C. Sidgwick. 2, H. Beldon. *hc*, J. Roberts, Bramley. *c*, J. Smith, Gilstead.

BANTAMS.—Game.—1, W. F. Entwistle, Westfield. 2, W. Adams, Ipswich. *hc*, W. F. Entwistle; A. Smith. *Any other Variety*.—1, H. Beldon. 2, R. H. Ashton, Mottram. *hc*, H. Harvey; J. Waddington, Guiseley. *Cock*.—1 and *hc*, W. F. Entwistle. 2, A. Smith.

GAME.—Red.—1, Miss Aikroyd, Eccleshill. 2, R. Hemmingsway, Shelf. *hc*, W. Fell, Adwalton. *Any other Variety*.—1 and 2, Miss Aikroyd. 2, W. Fell. *Cock*.—1, J. Mason, Worcester. 2, Miss Aikroyd. *hc*, W. Fell; W. Adams.

POLANDS.—Cup and 1, H. Beldon. 2, H. Harvey. *hc*, H. Beldon; T. Waddington.

DUCKS.—Rouen or Aylesbury.—1, W. Binns, Pudsey. 2, H. Beldon. *hc*, J. Newton, Silsden. *Any other Variety*.—1 and 2, W. Binns. *hc*, W. Binns; W. Lavett, Farsley.

ANY OTHER VARIETY.—1, H. Harvey. 2, J. Edmondson, Wortley.

PIGEONS.

CARRIERS.—1, J. Hawley, Bradford. 2, T. Waddington, Feniscowles. *hc*, H. Yardley, Birmingham; H. Harvey; J. E. Mason, Bradford (2).

PUTTERS.—1, H. Harvey. 2, J. Hawley. *hc*, R. Hemmingsway, Shelf; T. Waddington.

TUMBLERS.—Short-faced.—1, H. Harvey. 2, J. Hawley. *hc*, H. Yardley; J. Hawley; W. R. & H. O. Blenkinsop, Newcastle; T. Waddington; G. A. Bew, Beeston Hill. Long-faced.—1 and 2, D. Riddiough, Bradford. *hc*, W. Binns; J. S. Lishman, Bradford.

TURBITS.—1, J. W. Lishman, Bradford. 2, Clayton & Bairstow, Bradford. *hc*, J. E. Mason, Bradford; J. G. Dunn, Newcastle; W. Lund, Shipley; G. Burton, Leeds; G. A. Bew, Leeds.

OWLS.—English.—1, H. Harvey. 2, W. F. Entwistle. *hc*, J. Hawley; J. E. Mason; D. Riddiough; W. F. Entwistle. *c*, J. Thresh.

JACOBSINS.—1, W. Binns. 2, W. R. & H. O. Blenkinsop. *hc*, J. Hawley; J. E. Mason; T. Waddington; G. Burton, Leeds.

FANTAILS.—1 and 2, J. E. Lovelandside, Newark. *hc*, J. Walker, Newark; J. Hairsine, Hull; H. Yardley.

BARBS.—1, T. Waddington. 2, W. R. & H. O. Blenkinsop. *hc*, H. Yardley; J. Hawley; W. Binns.

DRAGOONS.—1, H. Jennings, Allerton. 2, J. G. Dunn. *hc*, H. Yardley; H. Harvey; A. Smith; Clayton & Bairstow.

TRUMPETERS.—1 and 2, J. Hawley. *hc*, T. Waddington.

TURBITS.—1, J. W. Collins, Halifax. 2, D. Riddiough. *hc*, H. E. Hanson, Bradford; H. Yardley; W. Binns; W. F. Entwistle; G. A. Bew. Long-faced.—1, D. Riddiough. 2, H. Jennings. *hc*, R. Pratt, Bradford; W. Binns; W. F. Entwistle; W. Lund; A. Ashton, Middleton.

ANY OTHER VARIETY.—1 and 2, T. Waddington. 2, J. S. Lishman. *hc*, H. Yardley; J. E. Mason; W. Binns; D. Riddiough; T. Waddington.

CANARIES.

YELLOW.—English.—1, T. F. Fosbrooke, Leeds. 2, L. Belk, Dewsbury. *Even-marked*.—1, D. Illingworth, Horsforth. 2, L. Belk.

BUFF.—1, B. Keighley, Farsley. 2, J. & T. Fawcett, Baildon. *Even-marked*.—1 and 2, J. Shepherd, Bradford.

NORWICH.—Clear Yellow.—1, J. Wilkinson, Great Horton. 2, J. Benn, Wortley.

BELGIAN.—Clear Yellow.—1, J. H. Stansfield, Leeds. 2, J. Shepherd, Bradford. *Clear Buff*.—1, J. & T. Fawcett. 2, L. Belk.

LIZARD.—1, D. Illingworth, Bradford. 2, J. Wilkinson, Great Horton.

RABBITS.—Lop-eared.—Buck.—1 and Medal, T. C. & H. Lord, Huddersfield. 2, H. Cawood, Thorne. *hc*, W. H. Webb, Bilston. *Do*.—1, T. C. & H. Lord. 2, H. Cawood, Thorne. *Heaviest*.—1, H. Cawood. 2, G. S. Burton, Leeds.

Himalayan.—1, G. Burton. 2, S. Ball, Bradford. *hc*, J. Sprinchorn, Stanningley (2); S. Ball, Bradford. *Silver-Grey*.—1, R. H. Grew, Wakefield. 2, S. G. Hudson, Hull. *hc*, J. L. Varley, Bingley. *Any other Variety*.—1 and *hc*, S. G. Hudson, Hull. 2, G. Burton, Leeds.

JUDGES.—Poultry, Pigeons, and Rabbits: Mr. E. Hutton, Pudsey; Canaries and Parrots: Mr. Gledson, Idle.

IPSWICH POULTRY SOCIETY'S EXHIBITION (Established 1865), will take place, as per advertisement in this Journal, October 16th, 17th, and 18th. There are seven silver cups offered for the usual poultry classes, with a five-guinea special prize for Rabbits. For cats, which are introduced for the first time, there are a three-guinea cup and numerous special prizes. Considering the popularity gained at the recent cat shows at Edinburgh and the Crystal Palace, we doubt not but this adjunct will be a great attraction at Ipswich. We observe all the large

breeds of poultry are to be shown separately—i.e., single cockerels and single pullets, and no person in any way connected with the management of the Show will compete for the prizes offered.

WOODSOME POULTRY SHOW.

THE village of Woodsome is within a few miles of Huddersfield, and its Show is very popular in the district.

Rabbits were first on the list, and the few that were shown were good specimens.

There was but one pen of *Dorkings*, and there were two of *Spanish*, the first-prize pair of the latter variety being extremely fine in quality of face and drop. In *Cochins* the first-prize Partridge were very good in colour and condition, and the winning *Game*, though not in feather, were of good quality. In *Polands* and *Hamburgs* Mr. Beldon had most of the classes to himself; but in *Bantams* the entries were more numerous. The *Aylesbury* and *Rouen Ducks* were of fair quality in both classes. One class was devoted to chickens, the first being nice Buff *Cochins*, second *Black Hamburgs*, and the third *Gold-pencilled*.

In *Pigeons* there was nothing of note, with the exception of the first-prize *Fantails*, which were very fine.

DORKINGS.—1, E. Leech, Rochdale.
SPANISH.—1, J. Powell, Bradford. 2, J. Thresh, Bradford.
COCHIN-CHINA.—*Cinnamon* or *Buff*.—1, H. Lacy, Hebden Bridge. 2, J. White, Netherton, Wakefield.
COCHIN-CHINA.—*Cinnamon* or *Buff*.—1, J. White. 2, H. Beldon, Goitstock, Bingley. *hc*, H. Lacy.
GAME.—*Black-breasted* or *Brown Red*.—1, E. Aykroyd, Eccleshill. 2, J. Mason, Worcester. *Any other Colour*.—1, E. Aykroyd. 2, J. Smith, Kirkburton, *Polands*.—1 and *hc*, H. Beldon. 2, J. Battye, Holmfirth.
BRAMHAS.—1, E. Leech. 2, H. Lacy. *c*, A. H. Haigh, Lindley.
HAMBURGERS.—*Gold-pencilled*.—1, H. Beldon. 2, J. Brooke. *Gold-spangled*.—1, H. Beldon. *Silver-pencilled*.—1, H. Beldon. *Silver-spangled*.—1, H. Beldon.
GAME BANTAMS.—1 and 2, G. Noble, Staincliffe, Dewsbury. *hc*, J. Nutter, jun., Cleckheaton.
BANTAMS.—1, H. Beldon. 2, R. H. Ashton, Mottram, Manchester. *Extra* 2, E. Walton, Horncliffe, Rawtenstall.
DUCKS.—*Aylesbury*.—1 and 2, E. Leech. *hc*, H. Beldon. *c*, J. Hey, Huddersfield. *Rouen*.—1 and *hc*, J. Crosland, Huddersfield. 2, J. White.
TURKEY.—1, E. Leech.
ANY VARIETY.—*Chickens*.—1, J. Hey. 2, T. Hopkinson, Slaithwaite. *hc*, B. Lockwood, Holmfirth; G. Blackburn, Outlane.
EXTRA STOCK.—2, G. Blackburn (Black Hamburg).

PIGEONS.

POUTERS.—1, G. D. Garside, Marsh.
TUMBLERS.—1, G. D. Garside.
FANTAILS.—1, J. E. Liverside, Newark, Notts. 2, G. D. Garside.
JACOBS.—1, G. D. Garside.
BARBS.—1, G. D. Garside.
COMMON DOVECOOTE.—1, G. D. Garside. 2, J. H. Sykes, Almondbury.

RABBITS.—*Lop-eared*.—1 and 2, T. C. & H. Lord, Huddersfield. *Any other Variety*.—1 and 2, T. C. & H. Lord.

JUDGES.—Mr. E. Hutton, Pudsey, Leeds, and Mr. W. D. Henshall, Highburton.

CITY COLUMBARIAN SOCIETY.

THE first meeting this season of the members of the City Columbarian Society was held on the 22nd inst. at their new rooms, "The City of London Hotel," Bloomfield Street, Bishopsgate. The birds shown were all young ones of this season. Among them were some splendid Carriers and Barbs, shown by Mr. M. Hedley; Carriers, Pouters, Barbs, Tumblers, and Jacobins by Mr. Fuiton, whose birds were quite a show by themselves; Carriers by Messrs. Herriage, Yetton, Shuter, and Hammock; and Almond Tumblers, for which this Society stands pre-eminent, by Messrs. Gillett, Hall, Young, Davies, Stuck, and Ford. The birds shown were pronounced by all present, visitors as well as members, to be some of the best that have been seen for some years, considering the early period of the season.

TUMBLERS NOT TUMBLING.

THREE different communications have reached me on this subject, showing that the fact of Tumblers not tumbling, and the consequent disappointment of purchasers, is no common case. Two out of the three letters which have been forwarded to me are partly of the nature of private correspondence, but I will quote portions of them, as I am sure fanciers are always willing to let their remarks become public when they can either benefit or interest brother fanciers.

First, writes to me a former correspondent of "our Journal," Mr. G. Hardy, of Fulham Road, Brompton.

"I have been a fancier for the last thirty years, and I have only just found out the kind of birds to fly, and they are the pretty Black or Red Baldhead. I am having my flight made up of nothing else but tumbling Baldheads. I do not care about their being perfect in feather or marks so long as they have white flights, tails, and white rumps. I can get cocks, but not hens, and they are not short-faced but longish-faced birds.

"I hope shortly to have a first-class flight. I have lately been to Leicester, Coventry, and Birmingham, but could not find one to suit me. I saw one gentleman's flight at Leicester. They

flew five hours and a half without settling, but they do not tumble much; they are all of the same appearance as the Roller breed—in fact, they in-breed from these, and the tumbling has been bred out of them; fly as many as thirty in a flight, and they go into the clouds in fine weather, and it is very difficult to find them sometimes. No doubt Leicester bears the palm for high and long flying. I have a good many Black Balds of the Birmingham class that tumble beautifully; if they are crossed with Short-faced Black Baldheads they could be got to a very nice sort of flying and tumbling Black Baldheads."

This is very interesting, and conveys my exact idea of Baldheads being the perfection of tumblers for beauty of appearance in the air. A little girl looking at mine high up in the atmosphere, where even, though so high, the distinction of colour between white and black was visible, although the birds were rendered very small by their altitude, said to me, "They look like reels of white cotton twisting over in the air." I have frequently noticed that a child's own unprompted remark often exactly hits the truth. In regard to Mr. Hardy's letter, I may say that my taste is so fastidious that I must have good birds to look at on the ground, as well as good birds in the air, and out of good Baldheads for both purposes I have as yet only obtained Balds.

Next on the Tumbler subject comes a letter from a Northamptonshire vicar, who thus writes:—

"When I was a boy I used to have a flight of Tumblers, the thought of which after a lapse of twenty-five years makes me enthusiastic. They used to fly high and tumble well—that is, never drop. They had white wings and pearl eyes, no feathers on their legs. About a year and a half ago I thought I should like to start my boys with a flight, but I met with nothing but disappointment. I have had birds from all parts of England, but cannot get the right thing. I have given 10s. a-pair, which ought to be enough. I used to think 4s. or 5s. very extravagant when I was a boy.

"Where do these feathered legs come from? They are an abomination."

"I was quite delighted to read your letter. Your views on the Tumbler question are so precisely my own."

Now, thirdly, on this subject, there came to me this morning the following letter from a "SOMERSETSHIRE SQUIRE":—

"I think every Tumbler fancier will agree that Tumblers of the Blue and Black Baldhead breed are now bought with more uncertainty than ever as to their tumbling, but with regard to Red and Black Mottles my experience points the other way. I have bred Tumblers for six years and upwards, and beg to inform 'WILTSHIRE RECTOR' that unless he drafts every year the bad or non-tumbling birds he will with difficulty obtain a good flight. I never kept Blue or Black Baldheads for any length of time, as they never tumble with any certainty. If 'WILTSHIRE RECTOR' wants to see one of the best flights of birds in England, let him come and see a flight of forty birds belonging to—A SOMERSETSHIRE SQUIRE."

This is also very interesting, and as the writer kindly sends me his address, I may add that I shall be most happy to accept his kind invitation, particularly as his town in Somerset and mine in Wilts are not far apart, and easy of access by rail.—WILTSHIRE RECTOR.

THERE is another reason, and probably one of greater weight, besides the one adduced by "WILTSHIRE RECTOR" himself, for the non-tumbling of our modern Tumblers. There is no doubt but that in-breeding with the Short-faces for the sake of symmetry and colour—in fact, reducing the Tumbler to a fancy Pigeon, wholly, has had much to do with its physical deterioration; but the chief cause is, I believe, to be found in the great and increasing taste for the homing Pigeons. This will apply to the London district, for the taste for Tumblers in the midland district is as great (and, perhaps, becoming greater yearly) as ever, and there can be no complaint there of not tumbling; but as the birds are mostly of the feathered-legged kind, that is another matter. But the clean-legged Tumblers of "WILTSHIRE RECTOR's" taste are not to be found much away from London, and here, as he truly says, not one in ten tumbles.

There are several reasons why the homing birds are gaining such an ascendancy; the first, no doubt, is the encouragement which has been recently given to them by shows, races, &c.; then there is, amongst the smaller fanciers, the charm of a little quiet gambling between themselves; also the ease with which they can be got to fly well at home, as, if they are of any good, they have only to be turned out and they will fly in all weathers. In addition, and probably as important as either reason, is the susceptibility of this southern portion of London to fogs; if there is one anywhere it is sure to settle here, and everyone who has kept Tumblers knows that they will generally refuse to fly at all in such a state of the air.

In contrast to the ease with which the homing kind of Pigeons can be got to fly well, is the difficulty and often disappointment experienced in training Tumblers and keeping them well up to their work; it is, therefore, no wonder that the one should almost

completely supersede the other; and so much is this the case, that whereas in a radius of a couple or so of miles from here there are probably a hundred or two of Pigeon-fanciers large and small, there are, I believe, but a very few who attempt to fly a kit of Tumblers unmixed with the other kinds. And here, I believe, is the foundation of the grievance. The habit of rambling, and of rapid moderately low flying, which the homing birds have when the two kinds are flown together, entirely spoils the Tumblers' style, and prevents their tumbling, and these bad habits in a generation or two, without any regard being paid to the principle of selection of good tumbling birds, would hopelessly ruin a strain of birds as Tumblers, although they may still retain the size, shape, and general appearance. But this is not all; there is abundant proof in the coarseness of numbers of our Beards and Baldheads of crosses with the Skinnum; some of them, although not so very coarse, have a suspicious little ring of wattle round the eye, which speaks of a distant relationship enough to destroy the tumbling. The Rollers, although some of them are nearly as long in the beak as a Skinnum, are entirely innocent of wattle, either on the beak or eye; this point I consider a great criterion of the purity of Tumbler blood.

I intend myself having a foundation of the right sort, the clean-legged kind, to carry out a rigid system of selection, keeping nothing but good performers, and there is little doubt but by careful training, and breeding from the best birds, that they can be brought to the same high state of perfection as the Birmingham Rollers, without the objectionably coarse shape and feathered legs.—W. TORR.

MY APIARY IN 1872.

I AM somewhat surprised at the account given by "B. & W." page 105, of the honey season in his locality (Somersetshire). I have rather a different experience to relate, though my prospects early in the year seemed very poor indeed. Last summer was about the worst for bees I have ever known. I should hardly, perhaps, have saved a single hive through the winter if I had not supplied them all most liberally with food both in the autumn and this spring. As it was, two hives perished from the combined effects of cold and starvation, and one stock had the misfortune of losing its queen in March, but this I saved by giving a suitable brood comb early in April, from which a queen was raised; but as there were no drones at the time, I had to destroy her, and supply another brood comb, from which a fine and prolific queen was raised. This is now a good stock.

After these losses I commenced the season with but four stocks, one of them, from the loss of its queen, being in a very unprosperous condition.

One stock, which I shall designate as No. 1, in April was weak in bees, I therefore supplied it with a full sealed worker comb from No. 3. In the course of a few weeks this hive became extremely populous. Towards the end of May, having previously abstracted a brood comb for raising an artificial queen, I removed five of the frames, with the queen and the bees adhering, into another box, giving them five frames of empty combs, and shifting the hive to about 2 feet to the right on the same stand. The majority of the bees returned to the hive on the original stand containing the other five combs of brood, &c., together also with five frames of empty combs. The hive which retained its queen, though deprived of half its brood combs and the largest proportion of its bees, rapidly increased in population, so that after three or four weeks it became so populous that I fully anticipated that it would send forth a swarm. Accordingly, about the middle of June a very large super was given, in which the bees at once commenced work, and that so vigorously that I had to raise it on another box several inches in depth, the combs being worked down continuously. This super, though not perfectly filled, most probably contains between 50 lbs. and 60 lbs. of honey. It has not been yet taken off.

From No. 3, my strongest colony in April, two or three full brood combs were removed for the purpose of strengthening No. 1, and supplying a brood comb for the raising of an artificial queen in No. 2. This deprivation, owing probably to the substitution of empty combs for the full ones abstracted, seemed rather to conduce to the strength of the population than otherwise, so that about the middle of May a large, square, box super was put on, in which the bees immediately clustered in an enormous mass, comb-building and honey-storing progressing with great rapidity. I soon had to raise this super on a second, and subsequently to add a bell-glass above all. The first very heavy thunderstorm we had, with the unsettled weather which followed, checked the operations in the supers for a time, but the bees soon returned to their former industry. After the second great storm the secretion of honey seemed almost at a standstill. This super I have removed, but as it has not yet been weighed I cannot say what the weight of its contents may be, but it is something very considerable, as it was a matter of

very great difficulty to lift it from the stock and carry it a few yards.

No. 4 was in a small flat-topped straw hive, and never showed much signs of a very abundant population until it sent forth a large swarm, which settled up in a high tree from which it could not be taken, so that it was lost.

Beginning with four stocks, I have increased them to eight artificially, and also obtained a large harvest of honey. While raising queens in these artificial swarms, honey was so abundant that almost every available cell was filled and sealed over. Neither of the super-filling stocks made any attempt to swarm; and only one colony, which had previously exhibited no signs of being populous enough to do so, sent forth a swarm.

I never remember to have seen white clover so abundant in this neighbourhood as it has been the present season. Like "B. & W.'s" district, the honey-gathering season here usually terminates about the end of July.

Notwithstanding that as regards the honey season my experience differs from that of "B. & W.," I can endorse his statement as to the extraordinary fertility of the queens, of which evidence has been given in the early part of my observations. From the artificial swarm made from No. 1 in the manner previously described, comb after comb of sealed and other brood has been removed for the purpose of queen-rearing, or for strengthening other artificial colonies which might require the aid of such addition, yet in spite of all this the hive is still a strong and prosperous one, with plenty of stores for the coming winter.

In conclusion, I may also express a hope that reports of the honey season in various localities may be sent for comparison.—S. BEVAN FOX, Exeter.

TAKING HONEY.

THOSE persons who have their glasses filled with honey will now be preparing to take them off; but let it be done with great caution. Weigh the hives, and if it can be satisfactorily proved that they will contain 20 lbs. of honey each when the glasses are removed, all will be well; but if not, let the glass or box remain upon the stock hive until the bees have emptied it of its honey; as soon as this is ascertained, let it be removed.

[This advice of Mr. Payne's will answer many inquiries.]

BEE-KEEPING NEAR HADDINGTON.

THOUGH not in a position to give much information as regards my own apiary, yet living in the neighbourhood of some bee-keepers who are not to be surpassed for their skill in the manipulation and thorough knowledge of these interesting creatures, perhaps I may be excused for noticing some of their doings.

At the present time there will be nearly three hundred hives standing within a space of about three acres. One person has eighty, and another a hundred hives. The owner of the eighty started with forty-eight hives in the best possible condition in the spring, had his first swarm on the 31st of May, and continued getting them throughout June and into July. From these forty-eight stock hives, sometimes joining two or three hives together, he increased his stock at the end of the swarming season to eighty hives, which have been sent away to the heather.

Here the season has been cold and late, and wherever a scarcity of honey existed in the hive, and the bees were not fed, the deaths have been numerous; but those which were able to pull through improved rapidly when the turnip seed and clover came in.

Out of so large a stock, of course there must be a number of fine tops or supers of honey, and it is nearly all taken from the bees in the comb in this locality. The owner of the eighty hives has some very fine ones, and if we have fine weather from this time (middle of August) there will be a large quantity from the heather. My neighbour's bee hives stand in two rows, one 6 feet in front of the other, and 2 feet between each hive. Where so many are standing so near, and all equally good, there are times when a number of swarms come off together. One day this season, after a week of dull and cold weather, ten swarms came off and went together, alighting on an old espalier apple tree. Four of the queens he caught before they got among the heap. Nothing daunted, he set to work and separated them, with a queen at the head of ten stocks, and the bees so equally divided that there was not, perhaps, an ounce of bees more in the one than the other, and no fighting took place. I thought at the time, and still do, that it was a great feat, and one which few bee-keepers would have accomplished so successfully.

Of course, the barbarous mode of killing the bees with sulphur is not practised here. It is probable that this bee-keeper will reduce his stock for the winter to fifty by adding the bees

of one stock to some other weak one during the winter and spring, destroying all old queens, and keeping those only which have proved themselves good breeders. He will drive and join, perhaps, a hundred hives every season, and rarely, if ever, has a fight among them; when it does occur he attributes it to his own carelessness. He uses partly the old common straw skep, 14½ inches wide, and a wooden eight-sided one, 14½ inches wide and 8 inches deep. The latter he finds the bees do well in, and they last longer than the straw. The tops or supers are eight-sided boxes, 15 inches wide and 2½ or 3 inches deep. He studies to keep the large box for breeding purposes, and the supers for abstracting the honey, in which he is very successful, allowing just as much to remain in the lower box as will bring the bees through the winter. Any defects he makes up by feeding, which enables him to obtain swarms weighing 6 and 7 lbs.

My own apiary at the present time consists of only fifteen stocks, which have been sent to the heather on the 1st of August. The heaviest, in a straw hive, weighed 53 lbs. nett. after taking a super 12 lbs. weight from her; the others will average about 46 lbs. nett., some of them in ten-bar Woodbury frame hives. We find that size the most suitable for the generality of seasons in this locality.

For the last five or six years my apiary has suffered much from foul brood. I have tried all plans to get rid of it, extracting every bar whenever it made its appearance, but without success. Last year I put every swarm as it came off into clean new straw hives, and as soon as the brood was hatched in the old ones drove them out into new straw skeps; and though I have examined them all carefully this year, I only found one which had a few cells with the foul brood in it. I drove the bees at once from it into a new skep, being careful at the same time to allow no old combs to be lying about. All the wooden "Woodbury" hives and bars I plunged into boiling water, and painted them when dry with a saturated solution of chloride of lime (which I made myself, as that purchased is often very weak), put on with a brush, and about as thick as cream.

Some of those skeps I have used this year, and I will report at some future time whether the disease occurs again in them or not.

In this locality we are still unable to say what is the cause of foul brood; but we are fully convinced that it is not chilled brood. It has occurred, and is even now in great numbers of apiaries in this neighbourhood, but many know nothing about it, or the reason that their bees do not succeed.—ALEX. SHEARER, *Yester Gardens, Haddington.*

INTRODUCING LIGURIAN QUEENS— FEEDING, &c.

IN reference to the introduction of Ligurian queens, I wish to know whether black bees, when deprived of their own queen, entertain any greater objection to receiving queens of this variety than those of their own colour? Also, I wish to know, when introducing queens by the medium of cages, how to ascertain the proper time to liberate them from their temporary prisons. Do any movements of the bees indicate this?

The Rev. Mr. Wood, in his manual on bees, makes the following statement:—"If twenty-four hours have passed since the loss of the ordinary queen, a stranger queen is gladly accepted the instant she presents herself." (Page 56.) Surely if this is a fact, it applies to Ligurian queens, and the cage system of introducing them, must be humbug. The Rev. Mr. Wood must have had some foundation for this statement.

Is there any danger in feeding a hive by letting a continuous drop fall into or through it by a hole in the top at this time of the year? The bees appear to suck it up as fast as it falls down.—H. F. R.

[We do not believe that bees of either variety of *Apis mellifica* manifest any peculiar objection to receiving queens of another variety from their own. We confess, however, that we have had more experience in the introduction of Ligurian queens to black stocks, than in the introduction of black queens either to Ligurian bees or to those of their own colour.

We know of no method of ascertaining the exact time that it would be desirable to liberate the prisoners, and to deliver them over to the tender mercies of their intended subjects. We have varied our practice in this respect from an imprisonment of twenty-four hours to more than forty-eight hours, and cannot say that we found any difference in the results. The shorter time, therefore, we think preferable, as longer confinement than is actually necessary cannot be desirable. We should not, if the bees manifested much disquiet and excitement, choose that time for liberation, but should prefer waiting a few hours more.

We cannot say that Mr. Wood is wrong in his assertion, as we have no doubt that bees will frequently accept a stranger queen if set at liberty among them, or placed at once on the surface of their combs. We prefer, however, for valuable Ligurians, taking the precautionary measure of introducing

them in cages, whereby their presence is gradually made known to all the inmates of the hive, and they become saturated, as it were, with the prevailing odour of the interior.

We object to feeding in the way you propose, as being likely to induce robbery from bees of other hives, and the possibility, if the food be not taken up by the bees as fast as it is dropped on them or the central combs, of its causing the interior of the domicile to become anything but clean and comfortable. There is no difficulty in adapting some modifications of the method of feeding by the inverted bottle.]

NEW ADAPTERS.

INSTEAD of adapting-boards, I have this year used sheets of perforated zinc, the holes of which are five-twenty-fourths of an inch in diameter, through which it is impossible for a queen to pass. I have this year taken off most beautiful supers filled with the purest honeycomb. For a super I have also used a full-sized Woodbury frame hive, with the notches cut so as to contain nine frames only. Next year I shall have the notches cut so as to contain eight only, which I think will prove quite sufficient, and thus compel the bees to build wider combs. The only inconvenience I find in using so large a super is that the bees do not so readily ascend as in a smaller one; but this may be easily remedied if a centrifugal machine be used, and the super put on containing empty combs, or if the zinc adapter be kept out for a few days until the bees have commenced working. It is a good plan in ordering Woodbury hives to have them made with ten notches on two corresponding sides, and eight on the other two, so that it may be used either as a stock hive or super. If any of the readers of the Journal would like to try the perforated zinc, and find any difficulty in getting it of the proper size, I shall be most happy to send them a small piece for pattern on receipt of a stamped directed envelope addressed to—OBEN POOLE, *Uphill, Weston-super-Mare.*

[Thanks for your offer. Supers should never be altogether cleared of last year's comb, then the bees will more readily take to them another year. We should fear the zinc adapters in most years, as offering a considerable difficulty to the bees in passing up and down. We shall be glad of your experience with them another year.—EDS.]

BEEES IN A COLLATERAL HIVE.

I HAVE a stock of English bees in the centre box of a collateral hive, which stock threw off a strong swarm in June. I hived it in one of the side boxes of the above hive. The old stock has gradually become weaker, and the bees appear to be much less numerous. If I open the communication between the boxes, would the stock and the swarm form a union, and would it be advisable to do so now? The swarm is in a small box, which is full of honey, but the centre box is larger and not nearly so well stocked with honey, though there is plenty of comb some two or three years old.—WALTER E. SMITH.

[We should fear a grand fight between the hives if you open a communication between them. We do not advise it. Probably the centre box has swarmed overmuch, but the hive may recover itself before winter. If you see no pollen carried in during October, you may conclude that all is up with it; if otherwise, feed it up to a sufficient weight.]

ROBBER BEES.

WE received the following telegram early on Saturday afternoon:—"Civil war raging in bee house; three large stocks destroyed; looks like spreading to eight others in house and four outside. Please advise at once." To this we replied, "Separate the hives at night as far away as you can." This seemed to us the best reply we could give in the absence of our special advisers in apian matters. To one of these we at once referred the matter. His answer is as follows; we give it *in extenso*, as the subject is interesting, and similar difficulties may occur again.

"I should perhaps have recommended in the first instance a continuous shower of fine spray from the rose of a garden syringe, brought to play on all the hives engaged in strife. The rest, too, would not come in amiss for their share of the artificial rain. A year ago I found this of great use in quieting some robber bees. As soon as tolerable tranquillity was restored (and in any case after a time), I should have opened a thorough ventilation at top or bottom, or both, by covering the top holes with perforated zinc or empty boxes, and raising the hive about the eighth of an inch from the bottom board by the insertion of thin pieces of wood or slate. Then every entrance should have been absolutely closed for the rest of the day. I would then have opened all at night, and watched the issue carefully next day, repeating the same treatment till I had beaten the bees. Cool or rainy weather comes very appositely to one's aid under such circum-

stances; but where hot and fine weather continues the contest may last for some days. Still I believe that the treatment above given is an infallible one. The great point in all such cases is to check the evil at the beginning. If allowed to spread from hive to hive very great mischief will follow, even to the destruction of many hives."

ALTERING POSITION OF HIVES.

COULD we, without risk of losing many bees, move our hives (three in number) about 10 or 12 yards from the place where they now stand? The hives are in a situation where it is very awkward to do anything to them, as we cannot get behind them, moreover they are very much exposed, especially to the sun. We were thinking of putting up a small place which would serve as a shelter both from the heat and cold, but we could not put it any nearer than the distance above stated. — A VERY YOUNG BEE-KEEPER.

[You could not safely move your bees the distance you mention all at once. You can, however, easily accomplish what you desire by placing some temporary stands 2 or 3 feet in front, or a little less to the right or left, of the hives as they now are, and moving one hive at a time. The next day move another, and the third day the third, and at the same time the one first removed may be treated to a second alteration in the direction of the place where you wish it to permanently remain, and so on until all are brought to that spot. The sooner you set about changing their position the better, as more bees would be lost if it were attempted during the cold weather. You are also quite right in desiring to give your bees more shelter from the sun. The majority of the hives in Great Britain are far too much exposed to the glare and the heat of the mid-day summer sun. We have almost always found our bees answer best when they could be protected from the sun during the hottest hours of the day, by some thick bush or bushes.—EDS.]

OUR LETTER BOX.

BOOK WANTED.—A Subscriber requires a copy of "The Cow," by M. M. Milburn. Price to be sent to Mr. F. Dunster, Bookseller, Lyme Regis, Dorset.

CHICKENS' EYE-LIDS SWOLLEN (*E. S. T.*).—The swelling of the lids of the Bantams is an unquestionable sign of roup. Outward application relieves it, but does nothing towards its cure. Feed them on stimulants, give them pills of camphor or Baily's pills, give no whole food, and let them have only camphor julep to drink. It is not akin to ophthalmia. Foxes dislike tar, and seldom go near anything that smells of tar, or that is sticky from its application.

BRACHIA COCKEREL WEAK-LEGGED (*A Sub.*).—It is a very common thing for large young cocks to be weak at the knees, and to rest on the knuckles. Many such, as they get furnished and cease growing, become good strong birds. Feed yours well, and it is likely he will do so. If he do not, it will be soon enough to replace them in four months' time. You must allow the hens no "cavalier" but himself.

FOWLS IN CONFINED SPACE (*Fowl House*).—You must give particulars. What is the nature of your space? Do you propose to rear chickens in it, or have you any other available place? Have you no other outlet?

KEEPING DUCKS WHERE THERE IS NO WATER (*E. B.*).—If you keep or have at command plenty of broody hens in the early season, you may keep Aylesburys. They do not sit, and if well provided with kitchen and household scraps they do well. If you want less trouble, breed Rouens. You have only two troubles in Rouens—size and feather. They are harder than the Aylesburys. A pond is not at all necessary for Ducks, except in the breeding season, when they must have access to water from 12 to 18 inches deep. We think we should keep Rouens.

GREY PARROT UNWELL (*H. T.*).—We believe the bird has had an injured or a broken wing. This is frequently caused with blame to no one if the bird is frightened. It is done by the flight catching between the wires. Feed on ripe fruit, bread and milk, and maize, and let it have some dried wormwood in the cage to pick and play with.

EGGS FOR SALE, NOT FOR SITTING (*G. W. H.*).—Thrust a long needle in at one end of the egg.

VARIOUS (*H. F. R.*).—See what we said about the introduction of an Italian queen to a stock a few weeks ago. We think your plan worth trying but full of risk. The late Mr. Woodbury was a great advocate of the queen cage, and he seems to have been uniformly successful in the use of it; but the most skillful contrivances turn out very unsuccessful in the hands of novices or the least manipulators. As to the second case, either foul brood or starvation caused the death of your small swarms. We think the latter, from the fact of "their tongues being unnaturally distended." We have not observed that black bees are less disposed to receive Italian queens than the common black ones.

ANOTHER FOWL CONUNDRUM.—"F. A. F." sends this:—Why are fowls supposed to have no future existence? Because they have their next world (necks twisted) in this.

SUPER FULL OF HONEY (*E. M. M.*).—By all means take it away if the stock hive is sufficiently heavy—that is, if it weighs over 20 lbs. nett.

UNITING TWO CASTS (*A Subscriber*).—If you wish to unite the casts, you can do so at any time in the afternoon after the bees have returned home for the most part. Drive the bees of one cast first into an empty hive, and immediately drive the bees of the other into the same hive. There will be little or no fighting. As to beeswax, the combs should be first soaked in water for a day or two till all the honey matter is drained out of them. "Then boil them till they are thoroughly melted with sufficient water to avoid burning, the melted mass being afterwards expressed through a canvas bag into a pan of cold water, from which the wax is afterwards separated, remelted to purify it still further, and poured into moulds."

BEE INFORMATION (*G. S. A.*).—Read our "Bee-keeping for the Many," and send us any useful queries to be answered in "Our Letter Box."

FOOD FOR WRENS (*Brentfordensis*).—Boiled rice, boiled potatoes and carrots, hard-boiled egg, bruised hempseed, mawseed, and scraped meat mixed together.

METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

D A T E.	A.M.				IN THE DAY.				Rain.	
1872. August	Baromet- er at 9 a. and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Tem- perature.		Radiation Temperature		
		Dry.	Wet.			Max.	Min.	In sun.		On grass
We. 21	Inches. 29.974	deg. 69.6	deg. 64.9	N.E.	deg. 63.2	deg. 77.4	deg. 68.5	deg. 119.8	deg. 57.6	—
Th. 22	29.973	65.0	61.8	N.	63.4	76.3	58.2	112.0	57.2	—
Fri. 23	30.141	65.2	59.6	N.E.	63.8	76.5	58.2	122.0	58.0	—
Sat. 24	30.284	58.2	56.8	N.	63.0	78.3	50.0	120.2	51.6	—
Sun. 25	30.093	63.4	62.2	W.	63.4	78.6	55.2	120.0	54.0	0.389
Mo. 26	29.833	63.3	59.6	N.W.	63.6	70.0	58.4	115.4	58.0	0.250
Tu. 27	30.166	57.6	52.8	N.	62.0	65.8	50.3	113.5	49.8	—
Means	30.059	63.3	59.7		63.2	74.7	55.5	117.6	55.2	0.660

REMARKS.

- 21st.—Cloudy early, then very bright and fine; rain-like between 6 and 7 P.M., but fine after.
22nd.—Dull morning, brightening soon after 10 A.M.; fine day and afternoon, but cloudy evening and night.
23rd.—Dull at 5 A.M., fine at 8 A.M., and a most delightful day; bright sunshine, but very pleasant breeze; splendid starlight night.
24th.—Rather dull morning, a very fine day, but not so pleasant as the day before, from there being less wind.
25th.—Dull in morning, fine in middle of the day; rain-like between 7 and 8 P.M., but fine after.
26th.—Rain commencing at 4 A.M., and falling heavily, 0.380 being measured at 9 A.M., when the rain had ceased; sunshine and showers during the day; very fine night, but much cooler.
27th.—Fine morning, but temperature lower than it has been since the beginning of the month; the day fine throughout, and very little cloud.

Mean temperature at 9 A.M. about 4° below that of the preceding week; the mean of day temperature lower, but that of the night higher than the past week. The rain falling on Monday has lessened the ground temperature, and, of course, was to be expected, and the northerly winds have made the hot sunshine more agreeable.—G. J. SYMONS.

COVENT GARDEN MARKET.—AUGUST 28.

Very little alteration is to be noticed here, and business generally is very limited, both wholesale and retail.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	½	sieve	3	0 to 0	Mulberries.....	£	lb.	1	0 to 0
Apricots.....	doz.	0	0	0	Nectarines.....	doz.	3	0	0
Cherries.....	per lb.	0	0	0	Oranges.....	£	100	8	0 to 14
Chestnuts.....	bushel	0	0	0	Peaches.....	doz.	4	6	12
Currants.....	½ sieve	0	0	0	Pears, kitchen.....	doz.	0	0	0
Black.....	do.	0	0	0	dessert.....	doz.	2	0	4
Figs.....	doz.	2	0	4	Pine Apples.....	lb.	3	0	6
Filberts.....	lb.	1	0	0	Plums.....	½ sieve	5	0	0
Cobs.....	lb.	0	0	0	Quinces.....	doz.	0	0	0
Gooseberries.....	quart	0	0	0	Raspberries.....	lb.	0	0	0
Grapes, hothouse.....	doz.	0	0	0	Strawberries.....	£	lb.	0	0
Lemons.....	£	100	8	0 to 14	Walnuts.....	bushel	10	0	25
Melons.....	each	2	0	5	ditto.....	£	100	1	0

VEGETABLES.

		s.	d.	s.	d.			s.	d.	s.	d.
Artichokes.....	doz.	4	0	to 6	0	Mushrooms.....	pottle	1	0	to 3	0
Asparagus.....	£ 100	0	0	0	0	Mustard & Cress.....	punnet	0	2	0	0
Beans, Kidney.....	½ sieve	3	0	0	0	Onions.....	bunch	4	0	0	0
Broad.....	bushel	3	0	0	0	pickling.....	quart	0	6	0	0
Beet, Red.....	doz.	1	0	3	0	Parsley per doz. bunches	3	0	4	0	0
Broccoli.....	bundle	0	9	1	6	Parsnips.....	doz.	0	9	1	6
Cabbage.....	doz.	1	0	1	6	Peas.....	quart	1	0	1	6
Capiscums.....	£ 100	3	0	0	0	Potatoes.....	bushel	2	0	4	0
Carrots.....	bunch	0	6	0	0	Kidney.....	do.	2	0	4	0
Cauliflower.....	doz.	2	0	4	0	Round.....	do.	2	0	4	0
Celery.....	bundle	1	6	2	0	Radishes.....	doz. bunches	0	6	1	0
Coleworts.....	doz. bunches	2	0	3	0	Rhubarb.....	bundle	0	0	0	0
Cucumbers.....	each	0	3	1	0	Salsify.....	£ bundle	0	9	1	0
pickling.....	doz.	0	0	0	0	Savory.....	doz.	0	6	0	0
Endive.....	doz.	2	0	0	0	Scorzoneria.....	£ bundle	0	9	1	0
Fennel.....	bunch	0	3	0	0	Sea-kale.....	basket	0	0	0	0
Garlic.....	lb.	0	8	0	0	Shallots.....	lb.	0	4	0	0
Herbs.....	bunch	0	3	0	0	Spinach.....	bushel	3	0	4	0
Horseradish.....	bundle	5	0	7	0	Tomatoes.....	doz.	2	0	4	0
Leeks.....	bunch	0	2	0	0	Turnips.....	bunch	0	3	0	6
Lettuce.....	doz.	0	9	1	0	Vegetable Marrows.....	doz.	2	0	4	0

POULTRY MARKET.—AUGUST 28.

THE market is full of Grouse, and it is impossible to give any quotation. They are selling at all prices, from 4s. per dozen. We wonder senders do not get tired of it.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls.....	8	0	to 8	6	Hares.....	0	0	to 0	0
Smaller ditto.....	2	0	to 2	6	Rabbits.....	1	6	to 1	7
Chickens.....	1	9	to 2	0	Wild ditto.....	0	9	to 0	10
Geese.....	2	0	to 2	6	Pigeons.....	0	0	to 0	0
Ducks.....	2	0	to 2	6	Pheasants.....	0	0	to 0	0
Grouse.....	0	4	upwards		Partridges.....	0	0	to 0	0

WEEKLY CALENDAR.

Day of Month.	Day of Week.	SEPTEMBER 5—11, 1872.	Average Temperature near London.			Rain in 43 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m.	h.	m.	h.	m.	h.	
5	Th	Workshop Horticultural Show.	70.4	47.1	58.8	18	20	af 5	36	af 6	41	7	2
6	F		70.2	46.8	58.5	20	22	5	34	6	55	8	3
7	S	Twilight ends 8.36 P.M.	70.3	47.5	58.9	19	23	5	32	6	10	10	4
8	SUN	15 SUNDAY AFTER TRINITY.	69.4	48.0	58.7	19	25	5	30	6	29	11	5
9	M		69.1	48.1	51.6	19	27	5	28	6	5	9	6
10	Tu		69.7	45.5	57.6	21	28	5	25	6	7	2	7
11	W	Glasgow, Dublin, and Nottingham Horticultural Shows.	68.7	47.0	57.8	11	30	5	23	6	21	3	8

From observations taken near London during forty-three years, the average day temperature of the week is 69.7°; and its night temperature 47.1°. The greatest heat was 91°, on the 7th, 1868; and the lowest cold 28°, on the 7th, 1856. The greatest fall of rain was 1.27 inch.

THE ERFURT SEED-GROWERS.—No. 2.



CONTINUING up the road which leads round the walls, I at last arrive at the most extreme of Mr. Benary's fields, which, when viewed from the little rising ground over which it is necessary to pass in order to reach them, look most charming. Here, in two parallel strips, were between from sixteen to eighteen acres of Asters, pre-eminent among which was the Peony variety. The beauty of the plants, either when closely

examined or seen from a distance, was very great. Each flower was large and well filled, and the probability of the seed coming from them being true seemed to be insured by the immense quantities which had been rooted-out and lay strewn along the middle of the paths. Of these alone the seed must at worst have been worth a considerable amount. To the true lover of flowers such a wholesale weeding seems at best a cruel and wasteful expedient to secure what is unfortunately necessary. Beyond these were some more fields holding Zinnias, Scabiosas, African and French Marigolds, Schizanthus, Dracocephalum, Malope grandiflora, and other less important plants.

Retracing my steps to the field where was the collection of Pansies, and turning round to the left I came upon another field of about six acres, where there was also nothing but Asters. It would be difficult to say whether these or the ones I had first seen looked the finer. Here were the Dwarf Chrysanthemum, Victoria, Dwarf Bouquet, and Perfection varieties. One called the Schiller Aster was remarkable for the number of flowers, which in one plant, taken at haphazard, alone amounted to fifty. Of the effect produced by the deeper red and purple varieties when seen in such large masses it is impossible to convey any idea on paper, but the impression made upon me by the sight of the Nasturtiums seemed to be entirely eclipsed on first looking over this field.

Here ends the description of Mr. Benary's grounds, and on reviewing them in my own mind I must say I was struck with the extraordinarily neat manner in which they were kept. The intense neatness of the dressed grounds in front of the granary, and also that of the Palm house, excited my admiration every time I saw them, and one can hardly help thinking that a business in which so much attention can be given to a minor point must in other respects be in a high degree prosperous.

Re-entering the town by the Brühler Thor, and keeping up towards the eastern side of the town, I reach the main street called the Anger, which in German means an open piece of pasture land, and in olden times consisted of that, and was the spot where the sale of wood was carried on. At the end of the Anger is a somewhat narrow street that leads to another gate called the Krämpfer Thor. Going out by this I arrive upon the road which leads to Buttstedt, and on which, at the distance of about a mile from the town, is the establishment

of Messrs. Haage & Schmidt, one of the most noted in Germany, and a most worthy rival to that of Mr. Benary. On both sides of the way are to be seen quantities of Petunias, Asters, and Nasturtiums, and in some places fields of Poppies, which are grown here for crushing, looking now, most certainly, very gaunt, brown, and melancholy, and very different from what they did six weeks before, when their milk-white petals, splashed with purple at the base, waved up and down with every gust of the summer breeze. On the right-hand side, at about half a mile from the Krämpfer Thor, and very near the railway station, is a large white building. This is the house of the brother of Mr. Schmidt, who employs himself in trying to preserve the evanescent beauty of flowers by drying them, and afterwards forming them into bouquets. Continuing on across the railway I at last come to the object of my visit, the position of which is indicated from afar by an imposing-looking lightly-coloured house. This is the dwelling and granaries of Messrs. Haage & Schmidt combined, the character of which is made unmistakeable by the numerous glass houses, seed sacks, and the busy throng of working people around.

Going round by the farther side I enter upon a long path which for some way is bounded on the right-hand by a small plot of newly-made dressed ground, on the left by the side of the house. Beyond the point where these terminate appear on both sides successive ranges of half-sunken pits and glass houses running at right angles to the path. The majority of those on the right contained some of the smaller kinds of Palms, but there was one containing some very fine Balsams, and another holding only Pelargoniums. Towards the end were a very fine collection of Cacti, some of which still continued in flower. Whether the importation of these rarities is a profitable business Messrs. Haage & Schmidt alone can tell; but to judge from the numbers that were here assembled one might be led to suppose that so numerous an importation would not be permitted if such were not the case. The succession on this side was closed by a number of young Coniferæ.

The first objects I saw coming up on the left-hand side were a great number of different plants placed under a framework of rough poles, which in front was thickly overgrown with Virginian Creeper. Amongst these were conspicuous—for it would be impossible to mention all with any comfort to the reader—Crinum, Agapanthus, Cyrtanthus, Buphonia, Brunsvigia, Swansonias, Begonias, and innumerable Palms. Here, too, were some Ferns, including Dicksonia antarctica and others, all of which seemed to have suffered from the intense heat that was for a few days so prevalent here about a month previously.

Nearer the house were seven glass structures, all capable of being heated if necessary, and an eighth was in course of construction. The most remarkable of the plants contained in them were—those in the first, which consisted of Ferns, Caladiums, Musas, and Cielanthus; in the second, Eucodonopsis, Nagelias, and Caladiums; in the third, a collection of Cacti, Musas, and Vallotas; and in

the sixth, a most interesting assortment of *Gesneras*, *Achimenes*, and *Tydas*.

Having now come back to the house I turn to the right, and soon find myself at the side which looks straight up the high road towards Erfurt. Here, in a corresponding position with the dressed grounds on the other side, were arranged more Palms under a large cage-like erection, composed of young Firs, and amongst them *Phoenix reclinata* was conspicuous. In the same line with these, parallel with the afore-mentioned path, and separated from it by the row of glass houses, were enormous stands filled with different varieties of Stocks, which, though now fully run to seed, are allowed to remain in the pots until the winter, when, during some slack time, they will be taken by the workpeople and shelled. The number of pots, I believe, amounted to between seventy and eighty thousand, each pot containing on an average two plants, and the varieties to between four and five hundred. In addition to these, Messrs. Haage & Schmidt receive annually a few tens of thousands of pots from smaller growers in the town. With regard to obtaining double flowers of this plant, about which so much has been written, Mr. Haage told me the secret, so far as his experience went, lay in selecting the seed from those pods which were but slightly or not at all divided at the top. Running along by the side of these stands down towards the road were a number of glass-covered beds containing *Portulacas*, *Petunias*, *Phloxes*, *African Marigolds*, and *Cockscombs*. At the upper end in one of these beds were some fifty plants of *Lisianthus Russellianus*, which to all appearance had been splendidly grown, for the flowers were large and well coloured, but unfortunately now in a dying condition in consequence of having been carelessly transplanted by some noodle-headed workman. It has lately been stated in the Journal that persons in general find this a difficult plant to grow. Mr. Haage is not of this opinion, and says it only arises from inattention to preserving the conditions under which the plant exists when in an uncultivated state. The requisites are bottom heat, moisture, and shelter from the hot sun. The way of growing the plant here is as follows: The seed is sown in pans during March in sandy loam; when large enough the plants are transplanted into cutting pots; they should receive bottom heat as the summer advances, and at the end of the first season be in 2-inch pots. Their winter position should be near the glass, and their condition very dry—in fact, being only watered enough to keep life in them. At the end of January or beginning of February of the next season they ought to be started into growth in the old pots, and when showing signs of life transplanted. From this time they should receive a new shift every time the roots grow through the bottom of the pot, but in doing this great care must be taken not to break off the spongioles, or else the mishap which has just befallen Messrs. Haage & Schmidt will ensue. The tops should be pinched two or three times, and by July or August of the second year the plants in 8-inch pots will be in their full beauty. Just beyond the spot where the unfortunate *Lisianthus* were, and across the path described directly after this, is another large cage-like shelter, under which were ranged in rows more than three hundred plants of the charming little-flowered *Tropæolum canariense*.

From this point there runs, in a straight line, a path of about 250 yards long cutting the enclosed grounds through the centre; whilst from the road runs parallel with the buildings one of similar width and straightness, which intersects the first at right angles almost in the middle. Thus the interior is divided into four quarters, the borders of which were planted with, first a row of *Verbenas* in great and charming variety, then another of *Dahlias*, and within these two a third of Vines. Inside were chiefly rows of fruit and ornamental trees, among which *Gleditsias*, variegated Maples, *Berberis Knightii*, and numerous Hawthorns showed prominently forth. At the end of the first-mentioned path was a strip of ground without the part so thickly covered with trees, and in it were a large number of *Gladioli* and *Salpiglossis* of buff, brown, yellow, purple, and intermediate varieties.

Going outwards now and crossing a strip planted with *Balsams*, *Lobelias*, and *Colchicum autumnale*, I gain the high road, on the other side of which are a great many of the open fields of Messrs. Haage & Schmidt. Here between intervening strips of corn were many variously arranged beds of *Phloxes*, *Scabiouses*, *Verbenas*, some extensive ones of *Calliopsis bicolor* and *Helichrysums*. Leaving these and going straight out until I was more than a quarter of a mile distant from the front of Messrs. Haage & Schmidt's establishment, I arrived at the greater part of their stock of Asters. Of these there were

about ten acres, the varieties being large and full-flowered ones of red, purple, and white. In the last rays of the sun, which was just sinking behind the hills bounding the basin in which Erfurt lies, the different shades of colour came out forcibly, and yet without any of the objectionable glare which so often results from an exposure to too intense a body of light.

With these Asters the description of the most striking points in Messrs. Haage & Schmidt's establishment ends, but the effect produced by viewing them is not so easily set aside. Although not distinguished by the excessive neatness so characteristic of the grounds of Mr. Benary, there is nevertheless an excuse for this in the visibly active manner in which everything is gone about, and the large amount of business proceeding in and about the houses. In the quieter portions of the gardens, however, even in this respect there is no reason to find fault; and when walking along the paths, made pleasant to the tread by moistened cocoa-nut fibre, and contemplating the beautiful lines of *Verbenas*, one forgets all feelings of hypercriticism in the overwhelming ones of satisfaction induced by the pleasing scene around.

Next in importance to the two firms already described is that of Messrs. Platz & Son. The head-quarters of these gentlemen are in the Krämpfer Strasse, down which it is necessary to pass in order to get to Messrs. Haage & Schmidt's. At the back of the dwelling-house, which is situated in a continuous row of other houses, are spacious grounds entirely shut-in by buildings of different kinds. Here, separated by intervening strips of turf planted with *Araucarias*, *Hollies*, *Coniferae*, and other young ornamental trees, were parallel rows of glass houses and stands, filled with, in one case, *Gloxinias*, but chiefly *Balsams* and Stocks. The larger portion of the grounds is without the gates, lying on both sides of the road to Buttstedt, and also a little to the left of it. In an enclosed part running round by the moat were a large number of white, pale yellow, and red varieties of *Zinnias*; but the space was principally occupied with fruit and ornamental trees, and with what seemed rather a rarity in the gardens here—a number of *Roses*. Outside this lay the most important part of the grounds, but whether on account of the lightness of the soil or some other defect, the plants did certainly not look so thriving as those I had seen before. The greater portion of them were Asters, but nearly all the other kinds grown at Mr. Benary's and Messrs. Haage & Schmidt's were also there.

From the description of these the grounds of the three largest firms the reader ought to be able to form a good idea of what the growing of flowers around Erfurt really is. As may be gathered from what has been said before, in the cultivation of Stocks and Asters this town is unrivalled, and I strongly suspect that there are few if any other places where such *Pinks* and *Picotees* as those of Mr. Benary can be seen. Anyone who does not already know, and is able to pay for them, could not do better than obtain some of his varieties of *Dianthus Heddewigii* and *diadematus*.

Besides the firms already mentioned are those of Mr. Heine-mann and Mr. Adolph Haage, jun. The former has a very choice collection of *Fuchsias*, the latter an extraordinarily large number of Cacti. The sum total of the establishments engaged in the cultivation of fruits and flowers in Erfurt is thirty-six, a very large number for so small a town, and which one would scarcely credit until he understood the full amount of seed produced by the smaller for the larger firms. Mr. Benary has twelve persons commissioned to grow quantities of particular plants for him, and Messrs. Haage & Schmidt have nearly as many, or even more. Of course they do not grow exclusively for the larger ones, or else we should soon have them mount up to more than a hundred. Of the civility with which any foreigner wishing to inspect the various establishments here is received I cannot speak too highly. A German remarked to me, almost mournfully, that the predilection for strangers in his country was very great; and I can assure Englishmen that if such be the case in general, it is not less so in the seed and flower trade.—ROBIN.

LARGE ONIONS.—At the Banbury Horticultural Exhibition held on Tuesday week, the entries in the different divisions were quite equal to those of previous years in quantity and quality, but the most noticeable feature was the extraordinary Onions displayed in a large tent. They were shown in a sweepstakes open to all England. Mr. Taplin, of Banbury, was again the successful competitor; he took the first prize in

the All-England class with twelve bulbs weighing 15 lbs., and some measuring $1\frac{1}{2}$ inches in circumference.

SUPPORTING FLOWERS IN OPEN BEDS.

AFTER putting twigs in the beds for support I was told my doing so had not escaped a certain amount of adverse criticism, such as "a waste of time and labour—quite unnecessary and uncalled for," &c. A little explanation, if asked for, would often lead us to see that there may be reasons for doing certain things by others of which we never thought. As respects this, the use of little twiggy branchlets from 9 inches to 24 or 30 inches in height, according to the size of the plants, giving a tie here, and depending only on the branchlet there, two or three facts are now perceptible. Long ago scarcely an inch of the twigs could be seen, but they served their purpose, as in this exposed place (Hertfordshire), with the brisk gales that alternated with heavy thunder-showers, not a plant has moved out of its place, whilst before I adopted the practice I have found strong scarlet Geraniums torn up by the roots. Even where tall *Ageratum*s and *Salvia*s are grown for centres and back rows, the branchlet is far more effective than the straight stick, and without either there are few places where they would stand heavy rains and brisk gales without being injured. Where very dwarf plants only are used, and if what would naturally be vigorous is by the treatment made dwarf, then no bushing or other support may be necessary. There is no want of common sense in noting circumstances, and so far acting in accordance with them.

With regard to tying plants, when strong Phloxes, Hollyhocks, Dahlias, &c., are grown they must be supported. Times were when a plant would have as many sticks about it as might have done for the framework of an African hut, and as if the sticks themselves were the chief attraction. There may be exceptions, but there is only one rule which I wish to follow, and that is to give to all such plants one stout stick in the centre, and no more, and then that stick will seldom, or for any length of time, be seen, and the less that is seen of any such support the better and the more graceful will the plant look. Of course, it is not intended that the plant should be bundled up to the stick like a truss of straw. A few shoots in the centre may be tied loosely to the stake, and the outer branches may be looped on to it with fine light brown cord, which will never attract notice; the plant will then look as if it were growing naturally.

In a fine plant of a *Polygala* in a 14-inch pot I once counted sixty-five white whittled stakes made from double laths. In such a plant five stakes might have been permitted, but one would have been better still if the individual shoots had been stronger; but five would have answered admirably with a band of string or fine wire, which would not have oppressed the eye like a forest of sticks that had taken a great deal of time to prepare. Putting in as many stakes as possible is a great mistake. Try the other plan—have as few as possible, and keep them as much concealed as possible.

The same rule applies to *Chrysanthemums*, especially the strong-growing kinds in pots. One would sometimes think that the object was to put as many sticks into a pot as possible. If put in in time, and a ring round the rim of the pot, very few sticks, if more than one in the centre, will be absolutely necessary. Not so long ago a clever keen amateur, who worked so as to deserve all praise, was perfectly astonished because his neat, bushy, compact *Pelargonium*s were not placed for honours. The plants were so compact that they did not require a stick—at least, not one to be seen. Every shoot, however, had its nice whittled stick, each with a sharp point 2 or 3 inches above the bloom and foliage; one of these points got into the eyebrow, and almost into the eye, of one of the judges, who wanted to closely examine a fine corymb of bloom. I had nothing to do with the judging of these plants, but the contest was a very close one, plant compared with plant, and I have not the least doubt that the prominent sticks drew the line, as in the winning group not a stick was visible.

There have been several inquiries as to the colour of stakes. I wish everyone to please himself, but the colour of a fine hazel rod, still fresh, but cut for six months or more, is more pleasing to my eye, so long as it is seen, than a clean-cut lath or the finest painted stick, whatever be the colour. The bark of a nice hazel, or even an ash, is not at all obtrusive. For small plants, where several twiggy sticks must be used, the summer prunings of Apples and Pears when more than a foot in length come in very useful; and to make the most of

them the leaves should be stripped off them, and then two or three bands of matting put round a bundle; the little shoots will thus be kept straight for use, after they have laid for some time in a dry place so as to lose all their vitality.

It may be said, "Little staking may suit very well if the plants are never to be moved any distance, but how will they be then if not well secured?" I think all the better. If the mass of outside shoots are merely looped to the support with fine string, on moving you can place a broad band of matting once or twice round the plant, so as to make a sort of safe bundle of it. When you take it to its fresh position undo the bands, shake the plant out, and it will at once assume its natural gracefulness. I am the more diffuse on this little matter because I see clearly that there will be so much demanded from gardeners otherwise, that there will be no time for cutting laths, making pegs from old brooms, and all the rest of it. With a bundle of summer prunings in one's hands I can make quantities of pegs as I go along, cracking necessary lengths in the middle, and inserting them as so many hair pins.

I have made some remarks about staking in flower-beds, but that is not always enough. Heat and moisture have this year made plants grow fast, and in round beds, and especially in straight-lined ribbon-borders were no means adopted to counteract it, there would soon from the free growth be a dense confused mass of leaves and bloom; for instance, huge masses of *Trentham Rose Geranium* falling over and mingling with as dense masses of yellow *Calceolaria*. I remedy all these things on a dry day by putting in inconspicuous stakes 3 or 4 feet apart, and connect them with very small cord, such as can be purchased for about 3d. per ball of 200 or 300 yards. This done neatly, after the second day neither stick nor cord will be seen, and yet the massive lines will be clear and distinct, with whatever little blending here and there that may be judged necessary, so as to prevent the irksomeness of a strict uniformity. Some lines have had to be thus treated a second time, as *Geranium*s grew so strongly. In such cases taller sticks were put in, and the same cord was used again, placing it higher. Many people have wondered that, with not an inch of ground to be seen, the lines of colour could yet be so defined and distinct; but it is all due to a few bits of stick and a few balls of small cord, and neither can be seen without looking on purpose for them a day or two after they have been used. I know of no plan so effective with the same amount of labour and time spent. Here, again, I may state that where small plants are all that can be desired, such stringing will never be required; but it so happens that I like healthy vigorous growth as well as plenty of bloom.—R. F.

BOILERS AT THE ROYAL HORTICULTURAL SOCIETY'S BIRMINGHAM EXHIBITION.

No. 1.

IN giving a description of the various boilers exhibited at Birmingham, both those under trial and those not entered for competition, we should hardly have thought it necessary to have entered upon any discussion on the principles on which the circulation in horticultural boilers is effected, had it not been that we still find differences of opinion with regard to it. Many persons are apt to confuse cause and effect. Some say the motive power is the natural tendency of heat to rise, others that it is owing to the gravity of cold water, and that the greater the difference between the temperature of the flow and return—that is to say, the hotter the flow and the colder the return, the more rapid the circulation. The real motive cause is simply the difference of gravity between equal cubic volumes of water at different temperatures. As water is heated it expands and becomes lighter by expansion, and therefore rises. In boiling a kettle by convection, as the heated particles rise the colder fall, to become heated in their turn, till the whole water in the kettle is boiling. In horticultural boilers the water is heated not only by convection, but still more by direct conduction from the iron surfaces of the boiler, both from those surfaces which receive the direct action of the fire, and also from the outward surfaces heated by flues; in fact, in whatever way or by whatever means we apply heat to the surfaces of boilers for horticultural purposes, the heat is conveyed to the water by the direct conduction from the iron, and we should bear in mind that, as the circulation is only effected by the difference of weight between equal volumes of water at different temperatures, the motive power is really a very weak one, and that nothing in the make of the boiler or the position of the pipes ought to interfere with or impede the circulation. Instead of a cold return and hot flow pipe being a proof of a rapid circulation it is on the con-

trary directly the reverse, because it shows the water has been longer in the pipes to give off its heat before returning to the boiler, and must remain longer in the boiler to regain the heat that is lost. The water in the pipes and boiler being in the first instance in a state of rest or equilibrium, and the motion or circulation of water through the pipes and back into the boiler being only caused by the action of the heat on the water in the boiler, the relative motion of the water throughout all the pipes must be the same. It cannot move quicker through any one foot of pipe than another. As it is an axiom that under equal conditions the heat radiated from equal lengths of piping in a certain period of time will be the same, it shows, if the water in one boiler returns colder after passing through a certain number of feet of piping than it does in another boiler under equal conditions, that the circulation in one boiler is slower than in the other, or, in other words, that the water has been longer in the pipes to give off its heat in one case than the other.

This will be so self-evident to most people, that it would seem hardly necessary to demonstrate it had it not been that at Birmingham we heard the directly contrary remark made by one who has written a good deal on the subject of boilers, who could not be persuaded he was wrong, and who wished to have this point raised for discussion. Experiments made on the specific gravity of water at different temperatures show that water expands slowly from 40° to 68°, very nearly uniformly from 68° to 176°, but it expands rather more rapidly as it increases in temperature, and that from 176° to the boiling point it expands more rapidly still. Thus, 1000 parts of water at 212° contract to 986 at 176°, and to 960 at 68°, and 957 at 40°, or, in other words, 960 gallons of water at 68° expand to 986 at 176°, and to 1000 at 212°, boiling point. Apply this to the motive power in a horticultural boiler, and it will be seen that the force is only a weak one. One thousand feet of 4-inch piping contain at a rough estimate five hundred gallons of water. Now, five hundred gallons of water as the water increases in temperature loses 1½ lb., or 20 ozs. on an average for every degree it rises from 70° to 170°, or at the rate of one-twenty-fifth of an ounce for every gallon; or, to put it in other words, a gallon of water diminishes 1 oz. in weight for every 25° it gains in temperature, and as a gallon of water at 60° weighs 10 lbs., it only loses on an average one one-hundred-and-sixtieth part of its weight as it increases 25° in temperature, and the motive power is the difference in weight between one gallon as it returns in the return-pipe, and one gallon as it leaves the boiler by the flow-pipe.

It can easily be seen, then, that in order to insure a rapid circulation no impediment must be placed either in the boiler or elsewhere in the pipes to the flow of the water. These figures are rather dry details, and may be uninteresting to many of your readers, but they help to give a sort of general idea of the motive power in horticultural boilers, and will, perhaps, help to correct the idea that there is great pressure by heat, and ample power to overcome engineering difficulties. It also shows that too many horizontal surfaces in boilers are so many impediments to the circulation if the water has to flow horizontally from one end to the other, as in horizontal tubular pipes or flat plates laid one on the top of the other. It shows also why the old form of saddle and conical boilers has so long stood the test of time and experience—because there is nothing in the construction of them to hinder the water rising in a natural way as it becomes heated. It also shows that it is wrong to run hot-water pipes too long on a level, that the pipes ought to rise gradually from the boiler till they reach the farthest point of the flow, and then fall gradually to the boiler again. In other words, if there were 1000 feet of piping, 500 of it ought to be flow, 500 return, and we need hardly point out that there can be no worse system adopted to prevent circulation than that of connecting the pipes to the boiler by smaller pipes, making either the flow or return pipe into the boiler 2 inches, or as we have sometimes seen it, 1-inch piping, and the rest of the pipes 3 or 4 inches, as the case may be. However, this plan is fast being exploded, and we very seldom now see new boilers erected with diminishing pipes either as flows or returns.

To return to the boilers exhibited at Birmingham, we may divide them into tubular, including upright and horizontal, of which we noted six specimens, three upright and three horizontal; and secondly, into saddle or modifications of the saddle boiler, such as conical; saddle-and-flue, Cornish, &c., of which there was a great variety—five for competition—viz., Mee's double saddle, Cannell's circulator, Lumby's independent, Hartley and Sugden's saddle boiler with extended water way, and Green's saddle boiler with shelves. Besides these five for competition there were also exhibited—Glover's improved Cornish, and also a saddle-and-flue boiler by Gray, of Chelsea; Jones & Rowes' Witley Court horticultural boiler with extended water way; conical and cylindrical boilers by Green; independent tank boiler, dome-top, and conical boilers by Hartley & Sugden; Ormson's convoluted and Premier flued Cornish boilers, and others.

We have forgot to mention another form of boiler, a spiral

pipe, by Deard, of Harlow, in Essex, which cannot be classed either with the tubular or the saddle, and which we shall notice again afterwards.

We will begin our remarks on the boilers by taking the upright tubulars—Weeks's duplex, Harlow's upright tubular, and Clarke's upright tubular with cylindrical jacket—only one of which, Mr. Harlow's, was entered for competition. Weeks's

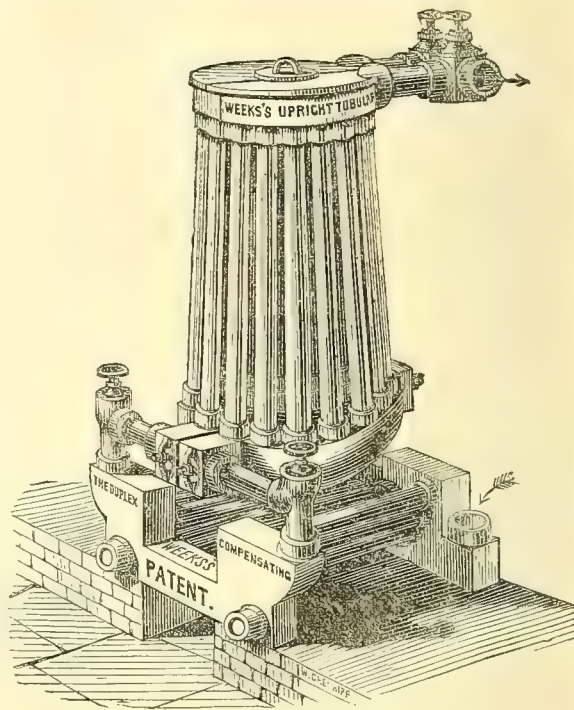


Fig. 1.

boiler, of which we annex an engraving (fig. 1), ought, in our opinion, to have been called the complex. The merit claimed for it, besides that of its being according to Messrs. Weeks's opinion the most powerful form of boiler extant, is that it is capable of being divided into two sections, so that in case of one part of the boiler being out of order the other part can be used. This

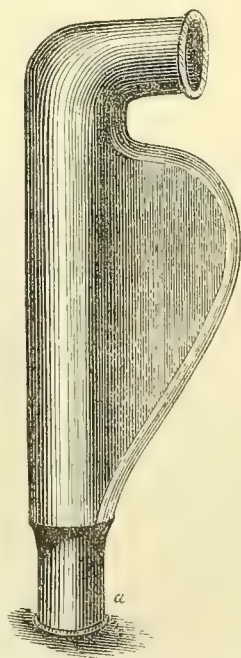


Fig. 2.

would, no doubt, be of advantage, but from the appearance of the boiler exhibited it would require an immense amount of fuel, and would be both costly to put up and costly to work. Mr. Harlow's boiler, which obtained a silver medal as the best tubular exhibited, has an improvement in the form of pipes (see fig. 2), one great merit of which is that it gives room for expansion and contraction, and also allows of any one of the pipes being easily removed in case of injury. The boiler is a powerful one, and a little modification of it would improve it. We like the position of the flow, and the way the pipes all meet together in a smaller cylinder at the top, the flow being from the upper part of the cylinder instead of the side. There is, however, too direct a draught to the flue; and we are of opinion that the coke or coal might easily get lodged or jammed between the extended gills of the pipes, which converge inwards into the fire-box. A cylindrical water-jacket connected with the lower water-bars would materially increase the heating power and economy of fuel.

Mr. Harlow also received a medal for his pipe-junctions, consisting of flanges with annular grooves, having an indiarubber

ring placed between the flanges, which are screwed up by means of bolts (see *figs. 3 and 4*). This makes a very perfect joint, but the difficulty to contend with is, that as there must be a flange at each end, the pipes must be cast the exact lengths required, as they cannot be cut, and wherever there is any complication in putting up pipes this difficulty will be a very material one, as anyone who has had to put up a series of pipes in small adjoining houses will know.

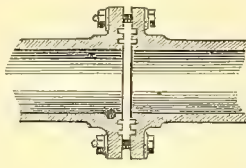


Fig. 8.

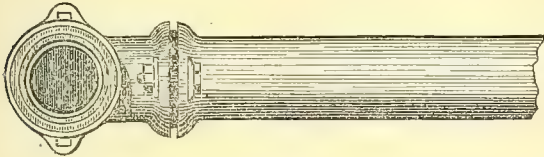


Fig. 4.

Mr. Clarke's tubular boiler, Stand No. 80, of which we next give an illustration (*fig. 5*), is, in our opinion, the best of the three upright tubular boilers exhibited, as the cylindrical jacket which connects all the hollow water-bars together gives free-

dom for the water to rise into the ascending pipes, and the whole of the water from the return is not obliged to pass through the horizontal firebars, which in some tubular boilers is the case, and very often materially checks the circulation. The upper cylindrical jacket is also a great economiser of heat, though we think there should be a connecting pipe or two between the upper and the under cylindrical jacket, and we think also an improvement might be made by having the flow pipe from the upper cylindrical jacket rising out of the flat top, where the present stoking-hole is placed, and by making the top conical or dome-shaped, putting the stoking-hole on one side of the dome. We have very little doubt, however, that this would prove a very efficient boiler.

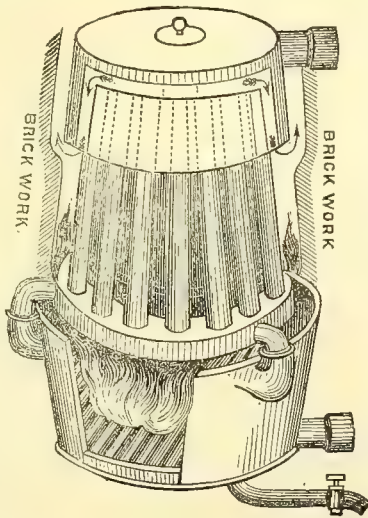


Fig. 5.

CRYSTAL PALACE AUTUMN SHOW.

In past years we were accustomed to a grand show in the autumn both of fruit and flowers, but of late this has been discontinued, and there has been nothing to fill its place. The loss of a special flower show has not been much felt, for the fortnightly meetings at South Kensington have pretty well supplied its place; but the loss of an autumn fruit show is felt, and there is nothing to compensate. It is true the Metropolitan Floral Society stepped a little beyond its bounds when it added to its Show at the Crystal Palace, on August 28th and 29th, a show of fruit as well, but it only sought to supply a want which has been long felt, and which ere long we hope will be adequately supplied. We would not urge the inauguration of such an exhibition this year, as the season has been so unfavourable, but an October or November fruit show, we conceive, another year would be well worthy of consideration, knowing, as we do, with how much interest the fruit is regarded. The old hand at exhibitions says, "Take my advice, look to the fruit first, it's sure to be crowded," and he is quite right; be the Orchids never so lovely, be the Ferns never so graceful, be the Dahlia, the Gladiolus, the Hollyhock never so perfect in form, so resplendent in colour—there, at the fruit, will be found the greatest throng. Why, then, should we not have an autumn fruit show?

But all this, though in connection with, has little to do with the third Show of the Metropolitan Floral Society. In its own special department it did its work, and did it well. We will

not flatter—for extent it fell short of the autumn shows of the years gone by, but for general good quality it left nothing to be desired.

The Dahlias, on the whole, were not large, neither were they coarse, but in the best stands they were evenly good. In the nurserymen's class for forty-eight, Mr. Keynes, of Salisbury, was first with fine blooms of Monarch, Jenny Austin, Amy Creed, Vice-President, Mr. Dix, Charles Backhouse, Mrs. Dodds, Caroline Tetterell, W. Keynes, Richard Dean, Netty Buckell, Flag of Truce, James Cocker, John Standish, Flora Wyatt, Maid of Essex, Thomas Goodwin, Royalty, W. P. Laird, Golden Drop, Alexander Cramond, Bishop of Durham, Harriet Tetterell, Queen of Beauties, and Annie Neville. Mr. H. May, Hope Nurseries, Bedale, came in second with fine examples of Sir J. Smythe, John Kirby, President, Hugh Miller, James Cocker, Criterion, Lord Derby, Yellow Boy, Volunteer, and Lord Napier. In twenty-fours, Mr. J. Walker, of Thame, was first with excellent examples of John Standish, James Cocker, G. Herbert, Toison d'Or, Monarch, Flora Wyatt, Mr. Dix, and Leah; the second prize going to Messrs. Draycott & Sons, Leicester, and the third to Messrs. Barnard, Ridgway Nurseries, Thursley.

In the nurserymen's class for Fancies Mr. Keynes was again first, showing, amongst others, fine blooms of Fanny Sturt, Butterfly, Mrs. Saunders, Monarch, Gipsy, Bessie Wyatt, Mrs. Bennett, Richard Dean, John Salter, Hero of York, and Marquis of Lorne. The second prize went to Mr. May, who had a charming example of Stafford's Gem, Queen Mab, Norah Creina, Mrs. Saunders, and others; while the third position was taken by Mr. Walker, Thame.

In the amateurs' class for twenty-four, Mr. R. Petfield, gardener to J. Thornhill, Esq., Deddington, was first with a splendid stand, including Bob Ridley, J. Hunter, Vice-President, Mary Keynes, Royalty, Victory, Hugh Miller, Bishop of Durham, Gazelle, Leah, and Flora Wyatt. Second came Mr. T. Hobbs, Lower Easton, Bristol, with an excellent stand; third, Mr. C. J. Perry, Castle Bromwich; and fourth, Mr. J. Morgan, gardener to Major Scott, Reigate.

For twelves, both Show and Fancies, Mr. H. Glasscock, Bishop Stortford, was premier, showing in the former class very fine blooms of James Cocker, Vice-President, J. N. Keynes, Indian Chief, W. P. Laird, Toison d'Or, and Annie Neville. The other prizes in this class went to Messrs. Burpitt, Steer, and Fewkes; rest for the Fancies going to Messrs. Petfield, C. J. Perry, and Fewkes.

Of spikes of Hollyhocks, by far the best were those from the Rev. Lord Hawke, Willingham Rectory, who had seedlings, with Leviathan, Midnight, F. Chater, Purity, Walden Queen, and Queen of Yellows. The remaining prizetakers were Mr. W. Chater, Saffron Walden, Mr. J. J. Chater, Cambridge, and Mr. H. Minchin, Hook Norton. For twenty-four cut blooms Mr. W. Chater was first, showing, among others, fine examples of Scarlet Gem, Purity, Coronet, and Victor. Mr. Minchin, Mr. G. Wheeler, Warminster, and Mr. J. J. Chater were the other prizetakers; whilst for twelve blooms the prizes went to Lord Hawke, Mr. Minchin, and Mr. H. Catley, Bath.

Of Gladioli there was a splendid show, Messrs. Kelway, of Langport, alone furnishing in front of the orchestra some six hundred spikes. In the class for thirty-six spikes the same exhibitors took the lead with a fine collection, Mr. G. Wheeler, Warminster, being second, and the Rev. H. H. Dombrain third. For stands of twenty-four and twelve the prizetakers were Mr. J. Douglas, gardener to F. Whitbourn, Esq., Loxford Hall, Rev. Lord Hawke, and Rev. H. H. Dombrain. Other successful exhibitors were Rev. J. G. Hodgson, Croydon, Mr. H. Catley, Mr. J. Gold, and Mr. C. J. Perry.

Of Asters there was but a limited show. Mr. J. J. Chater and Mr. J. Anderson, Bethnal Green Road, were first for thirty-six and twelve French Asters respectively; those from the latter exhibitor were beautifully incurred, whilst Mr. Chater's, consisting chiefly of the Giant Emperor, Pæony, and Victoria races, were very large, some of them almost like Chrysanthemums, but others were not so perfect as desirable in the centres. Mr. G. Wheeler, Warminster, was second; and Mr. Hooper, Widcombe Hill, Bath, was fourth with excellent Victoria Asters; Mr. Walker, Thame, being third. The other prizes went to Mr. Smith, of Bishop Stortford, and Mr. R. Petfield. In German Asters Mr. Hooper was first with finely-coloured very well quilled blooms. Messrs. Petfield, Walker, and W. Chater also exhibited.

Of Verbenas Mr. C. J. Perry, Castle Bromwich, had a fine stand, and others came from Messrs. Minchin and Fewkes. Of Roses there were excellent examples. Mr. Prince, Oxford, Messrs. Paul & Son, Mr. French, gardener to Rev. B. Hutchinson, Rugby, and the Rev. J. B. Camm, each took prizes. Messrs. Keynes, Prince, and Turner also sent collections.

First-class certificates were awarded to the following—viz., to Mr. Keynes for Dahlia Mrs. Wilkinson, creamy white tipped with lilac; W. Newman, purplish maroon; Rev. J. B. Camm; and Ne plus Ultra, lilac; also to Mr. Turner, of Slough, for

Laura Haslam, primrose, tipped with ivory white; Herbert Turner, blush white; and Nelly, cream, tipped with rosy purple. Messrs. Kelway had first-class certificates for *Gladiolus Vacuna*, Unca, Olen, John Davis, William Dodds, and Zana; Mr. Douglas for *Carminata*, *Delicata*, and A. F. Barron; Mr. Wheeler, Warminster, for *Coquette*; and Rev. H. H. Dombraun for *Jupiter*, very fine dark crimson and red.

Messrs. Downie, Laird, & Laing exhibited a charming mixed group of *Phloxes*, *Palms*, *Caladiums*, and other plants; Mr. Turner and Mr. Glasscock collections of *Dahlias*; Mr. J. J. Chater a stand of fine double *Zinnias*; and Messrs. Carter & Co. a handsome specimen of *Adiantum farleyense*.

The show of fruit excited but little competition; in-door fruits were far from plentiful, and for Apples and Pears the Show was far too early. A later date could not, however, well have been fixed without sacrificing the flowers, which were the main object of the Show; but in Grapes, at least, considering the prizes offered, a greater competition might fairly have been expected. Although a first prize of £6 was offered for the best collection of fruit, no one came forward to claim it. The only Queen Pine came from Mr. A. Watkins, Bishop Stortford; the only other Pines from Mr. Douglas, gardener to F. Whitbourn, Esq., Loxford Hall, and Mr. Harrow, gardener to H. Bessemer, Esq., Denmark Hill, were Smooth-leaved Cayenne, taking first and second prizes in the Any other variety class. For collections of Grapes, Messrs. Lane, of Berkhamsted, and Mr. Douglas were prizetakers with fine bunches of Muscat of Alexandria, Black Hamburg, Foster's White Seedling, Mrs. Pince, Lady Downie's, Trentham Black, and Buckland Sweetwater. Of three bunches of Black Grapes there were only two exhibitors, Mr. C. Goldsmith, gardener to Sir W. Farquhar, Bart., Dorking, and Mr. Douglas, who each sent excellent Black Hamburgs. In the corresponding class for White Grapes, Messrs. Lane were first with grand bunches of Muscat of Alexandria, Mr. Cole, gardener to J. Budgett, Esq., Ealing Park, being second with excellent bunches, which, though not so large, appeared to be better ripened; Mr. Bristow was third. In Peaches Mr. Paice, gardener to W. Main, Esq., took the first place with Bellegarde, large and finely ripened; Mr. Dawes, Balcombe, being second with Grosse Mignonne, also fine. For Nectarines Mr. J. King was first with *Violette Hâtive*, Mr. Douglas second with excellent fruit of Pine Apple. In Melons Mr. Goldsmith was first, and R. Webb, Esq., Culham House, Reading, second, with green-fleshed kinds. Mr. Goldsmith also sent the only two dishes of Cherries. The best three dishes of Plums came from Mr. Jackson, gardener to J. L. Gower, Esq., Titsey Park, Limsfield, and consisted of Jefferson, Kirke's, and Green Gage; G. F. Wilson, Esq., Weybridge, was second with *Quetsche de Dorelle*, *Transparent Gage*, and *Goliath*; R. Webb, Esq., took the third place with Kirke's, Green Gage, and *White Magnum Bonum*. The best four dishes of Dessert Apples came from R. Webb, Esq., and consisted of *Excelsior*, *Newtown Pippin*, *Red Astrachan*, and *Ribston Pippin*. The remaining prizes went to Messrs. Gold and Bristow. In Kitchen Apples the last-named two exhibitors were third and fourth, Mr. Webb being again first with good samples of *Hollandbury*, *Blenheim Pippin*, and *Lord Suffield*, and Mr. Mortimer, Wallington, second. The best three dishes of Dessert Pears were *Burré d'Amanlis*, *Louise Bonne* of Jersey, and *Williams's Bon Chrétien* from Mr. Douglas. Messrs. Goldsmith, Miles, gardener to Lord Carrington, and Gold were also successful exhibitors. The single dishes of Pears exhibited for weight were not remarkable; the heaviest was *Catillac*, from Mr. Goldsmith, Mr. Miles being second. For flavour the best dishes were *Williams's Bon Chrétien* from Mr. Douglas, and *Louise Bonne* from G. F. Wilson, Esq.

I HOPE there is no parental partiality biasing my mind when I think over the splendid display of flowers we had at the Palace on August 28th, or that I am giving a rose-coloured account of the Show. I have attended many autumn shows; I have seen a larger display of flowers—notably the first exhibition we held two years ago, but never have I seen autumn flowers in such perfection as then. Mr. Keynes has exhibited *Dahlias* for a great many years, but never has he staged flowers of such depth and build as at this Show. *Gladiolus* were never so represented before; and *Hollyhocks* were in the very perfection of beauty; and as to *Roses*, who ever saw such *Roses* in August as Mr. Prince's, or such a box of *Clémence Raoux* as he put up? while *Asters*, if they have been more numerous exhibited, were never finer; and *Verbenas* were good in quality and abundant also. Fruit was deficient in quantity, although good in quality; but it could hardly be otherwise considering this is the worst fruit season we have had for thirty-five years.

Mr. Kelway made a splendid display of *Gladiolus*, not only his six hundred spikes, but also most especially his stand of thirty-six, claiming general attention. There is no doubt that he has a good strain of seedlings. Some flowers were remarkable for colour and form; but it is tantalising to feel that many of them will not be let out for years. As to amateurs, I am sure no

such three stands of twelve were ever before staged as Lord Hawke's, Mr. Douglas's, and my own, and it evidences that we are getting on in our cultivation, and I believe here, as in other things, the victory is with the big battalions. If Lord Hawke could have staged twelve such as his four first flowers, not even Mr. Kelway would have beaten him; and the blooms of *Beatrix* in Mr. Douglas's stand, and *Norma* and *Eurydice* in my own, were quite equal to anything elsewhere. In the class for six, too, there were some excellent flowers, especially in the Rev. J. G. Hodgson's, of Croydon. If we could only battle successfully with the disease which affects them, this would soon become a most popular flower; indeed, it must become so in spite of the disease, but I shall have more to say of it anon, when reviewing the whole subject for the year.

I shall not be trespassing on the domain of privacy if I add, that the opportunity was taken of giving a complimentary dinner to the veteran exhibitor, Mr. John Keynes, of Salisbury, who has just completed his fiftieth year as an exhibitor, and who, I believe, now retires from the field as a *Dahlia* exhibitor; his last triumph showing that the experience of the past has no way been hindered by the advance of years, and he now retires with his blushing honours thick upon him.

Finally, I would say to Rose exhibitors, Look to your laurels! they have already been plucked from some of your brows, and more determined contests are in store for you. Mr. Prince, of Oxford, will be a formidable competitor to the growers for sale, while Mr. Camm will make a good fight amongst amateurs. It is pleasant to find new hands taking up the work; and although I was beaten in *Gladiolus*, yet I gladly record the fact, when a new competitor, such as my friend Lord Hawke, lays me low with the first touch of his spear. I hope many more will come; and let us fight well and loyally in the tilted field, and let victors and vanquished alike take pleasure in the revived taste for florists' flowers.—D., Deal.

ROYAL HORTICULTURAL SOCIETY.

SEPTEMBER 4TH.

THOUGH by no means a large Show, the general quality of the *Dahlias*, *Asters*, and other subjects exhibited was very good.

In Class 1, for twenty-four *Dahlias*, Mr. Keynes, of Salisbury, was first with magnificent blooms of *Criterion*, *Julia Wyatt*, *Ne Plus Ultra*, Rev. Mr. Camm, deep rose; *Seedling*, *Caroline Tetterell*, Vice-President, *Lady Gladys Herbert*, *Monarch*, Mrs. Bunn, John Neville Keynes, *Amy Creed*, *Queen of Buffs*, *John Standish*, Mrs. Thornhill, *Yellow Boy*, *James Bennett*, *Queen of Beauties*, *Flag of Truce*, *Harriet Tetterell*, *Memorial*, *Flora Wyatt*, *James Cocker*, and *Maid of Essex*. Rarely, if ever, have we seen a stand so uniformly excellent. Second came Mr. Turner, of Slough; third Mr. Seale, *Vine Nurseries*, *Sevenoaks*. Mr. C. J. Perry, *Castle Bromwich*, and Mr. Walker, *Thame*, also exhibited in this class. In the amateurs' class for twelve blooms Mr. C. J. Perry was first with fine examples of *Acme of Perfection*, *Monarch*, *Marchioness of Lorne*, *Alexander Crammond*, *Amy Creed*, *Miss Roberts*, *Flora Wyatt*, *John Standish*, Vice-President, and *Annie Neville*. Mr. Beach, gardener to C. J. Herries, Esq., *St. Julians*, *Sevenoaks*, and Mr. Burpitt, gardener to C. Lambert, Esq., *Wandsworth Common*, took the second and third prizes.

Of *Asters* there was a good display. The first prize for twenty-four, not quilled, went to Mr. Rowe, gardener to Mrs. Lewis, *Roehampton*, for a stand of *Chrysanthemum*-flowered, well grown and well varied in colour. Mr. G. Wheeler, *Warminster*, was second, and Mr. J. Walker, *Thame*, was third with incurved very fine. In the open class for twelve blooms not quilled the prizes went to Mr. G. Wheeler, Mr. J. Walker, and Mr. W. Kemp, gardener to D. B. Chapman, Esq., *Roehampton*; and in the corresponding class for amateurs only Mr. Rowe, Mr. Kemp, and Mr. B. Porter, gardener to Mrs. Benham, *Sion Lodge*, *Isleworth*, were the successful competitors, each showing an excellent stand. For a tray of twenty-four blooms of *Pæony* varieties with incurved "petals," Mr. G. Wheeler was first, only one other exhibitor showing, and he was disqualified. Mr. Wheeler was also first for twenty-four *Victoria Asters* with reflexed petals; these were very fine. Mr. Vallance, *Farnham Royal*, sent a collection of fifty cut blooms. For six *Asters* not quilled, in 8-inch pots, Mr. Rowe and Mr. George, gardener to Miss Nicholson, *Putney Heath*, were respectively first and second, and Mr. Porter third.

An excellent stand of twenty-four *Verbenas* from Mr. C. J. Perry came first in the class for that flower, Mr. Burpitt being second.

For six pots of *Lilium speciosum* (*lancifolium*), not fewer than three varieties, Mr. W. Paul had a first prize for magnificent specimens of *rubrum*, *album*, and *atro sanguineum*; also an extra prize for a very fine collection of the same *Lily*.

Of miscellaneous subjects Mr. William Paul and Mr. G. Prince, of Oxford, sent fine stands of *Roses*; Mr. Turner, *Slough*, an excellent group of *Lilium auratum*, also some charming bedding and bouquet *Dahlias*. From Mr. Young, *Milford Nurseries*,

Godalming, came a new Golden Juniper, *Juniperus chinensis aurea*, which seems to be a desirable variety. Messrs. Standish and Co., of Ascot, also sent a Golden Juniper, *Juniperus japonica aurea*, having a fine golden hue, and being apparently of dwarf habit. From the same firm came also *Cupressus nootkatensis variegata*, nicely variegated with white.

FRUIT COMMITTEE.—G. F. Wilson, Esq., in the chair. Mr. Roberts, gardener to Lord Derby, Holwood Park, Bromley, sent very good examples of Frankenthal Grapes, grown on Vines over a hundred years old. Mr. East, gardener to F. Wigan, Esq., Clare Lodge, East Sheen, sent examples of Lady Downe's, Mrs. Pince's Black Muscat, and Muscat of Alexandria Grapes.

Mr. Pearson, nurseryman, Chilwell, Nottingham, sent examples of four seedling Grapes:—No. 1, a long oval amber yellow, with thick skin and a pleasant flavour, evidently a long keeper—Mr. Pearson was requested to send this again to show its keeping qualities;—No. 2, a medium-sized roundish-oval greenish white, with an exceedingly rich flavour; this was greatly approved of by the Committee; No. 3, a medium-sized round white, with large bunch, and rich flavour; No. 4, a long oval black, like the Black Morocco, but not quite ripe. The most of these were seedlings from the Black Alicante.

Mr. J. Clarke, Lower Grove House, Roehampton, sent a dish of Brown Turkey Figs. Mr. S. Wilderspeed, gardener to G. Jennings, Esq., Bothisham Hall, sent a Pear, stated to be a seedling from Marie Louise and Williams's Bon Chrétien, but which appeared identical with the latter. Mr. Dancer, Chiswick, sent some fine examples of Williams's Bon Chrétien Pears, grown on open standards. These were of fine flavour. G. F. Wilson, Esq., Heatherbank Cottage, Weybridge Heath, sent good examples of the Melon Apple.

Mr. Halstead, seedsman, Lancaster, exhibited examples of Duchess of Lancaster Cucumber, a variety of fine shape and appearance, but not sufficiently distinct from others in cultivation. Mr. R. Dean, seedsman, Ealing, W., sent examples of a small fresh-looking Cucumber, named Green Gem. Mr. Allan, gardener, Gunton Hall, Norwich, sent examples of selected White Spanish Onions, from seed sown in autumn and in spring. Lady Charles Wellesley, Conholt Park, Andover, sent a large fully-developed cone of *Araucaria imbricata*, with a quantity of ripe seed, which had been grown at Conholt Park on a small tree bearing about twenty-two cones.

Mr. Alexander Dean, of the Nurseries, Bedford, sent examples of jellies made from the fruit of *Berberis Aquifolium*, which was much appreciated, being very rich and pleasant; also examples of jam made from Blackberries, which, although good, was not equal to the Barbary example. In a season like the present, when fruit is so scarce, it is a very important matter to utilise the wild fruits of the country.

Mr. Muirhead, gardener to Lady C. Wellesley, Conholt Park, sent a fine fruit of Golden Perfection Melon, and one of Mr. Smith's Green-flesh. Mr. N. Kneller, gardener to W. S. Portall, Esq., Malshanger Park, Basingstoke, sent a Melon named Malshanger Hybrid, a small netted variety. Mr. J. Farquharson, Acton Nursery Gardens, Wrexham, sent a fruit of a fine handsome golden Melon. None of these varieties were of any merit as regards flavour.

FLORAL COMMITTEE.—Mr. J. Fraser in the chair. Mr. G. Prince, of Oxford, sent examples of a number of Roses worked on a cultivated seedling Briar stock; they were of extraordinary vigour, but the only means of arriving at a just conclusion in these matters is cultivation in a trial ground. Certainly the blooms exhibited by Mr. Prince were a good proof of the excellence of this stock. Mr. Eckford, gardener to the Earl of Radnor, Coleshill, had first-class certificates for *Verbena Fanny Purchase*, pale lilac, with a purple eye; *Star*, rose, with a deeper coloured centre; and *Dahlia Crown Prince*, maroon, of fine form. Mr. G. Smith, Edmonton, Mr. G. Parker, Maiden Green, Winkfield, and Mr. Harris, of Orpington, also sent seedling Dahlias. Mr. Turner, Slough, had a first-class certificate for *Florence Pontin*, blush, tipped with rosy purple, a well-built flower, and Lord Hawke, yellow; Mr. Keynes for *Egyptian Prince*, orange red, veined with darker red; *Matilda Mary Purchase*, delicate lilac rose, with a light centre; *Ada Tiffin*; W. Newman, rosy purple; and W. Sinclair, blush, tipped with crimson, a bright-looking flower. From Mr. R. Dean, Ealing and Bedford, came cut flowers of his new *Violas*, *Victoria Asters*, and *Tropæolums*, together with a plant of *Aurea Floribunda* French Marigold, which received a first-class certificate as a dwarf, free-flowering, very double sort.

From the Society's garden at Chiswick came a collection of *Tydas* and *Nægélías*. Messrs. Veitch, Royal Exotic Nursery, Chelsea, sent a very extensive and excellently-flowered collection of nearly all the different tribes of *Asters*. Mr. Rawlings, Romford, sent bouquet Dahlias; Mr. Kneller, gardener to W. S. Portall, Esq., Malshanger Park, Basingstoke, seedling *Antirrhinums*; Mr. B. Porter, seedling varieties of *Tropæolum Lobbianum*; Rev. C. Baker, Filleford Rectory, Bath, a seedling purple *Verbena*, deeper in colour, but not equal to Purple King;

Messrs. Downie, Laird, & Laing, Coleus Golden Prince, with nice golden tinted leaves, with red midribs; and Mr. C. J. Perry, *Verbena* Mrs. Reynolds Hole, with large trusses and pips, blush with a lilac eye. This received a first-class certificate.

Mr. A. Parsons, gardener to W. J. Blake, Esq., Danesbury, sent *Achimenes Firefly*, rich scarlet with a blush of magenta. It received a first-class certificate. The Rev. H. H. Dombrain, Westwell Vicarage, Ashford, exhibited *Gladiolus Phœbus* (Souchet), rosy red, with white stripe in the segments. From Messrs. E. G. Henderson came *Cineraria ceratophylla* with elegantly-cut frosted leaves; this was awarded a first-class certificate, as also *Ceanothus Gloire de Versailles*, of better habit than *C. azureus*, and of the same colour. Mr. Chambers, gardener to J. Laurence, Esq., Beddington, had first-class certificates for *Pteris fimbriata*, a nicely crested form, and *Pteris serrulata cristata*. Lastly, Messrs. Veitch exhibited a splendid *Dipladenia* named *insignis*, deeper in colour than any we know, and with flowers $4\frac{1}{2}$ inches in diameter. To this a first-class certificate was likewise awarded.

SELECT GERANIUMS.

HAVING grown this summer most of the varieties of Mr. Pearson's Geraniums mentioned by Mr. Q. Read in your number of August 22nd, I can endorse nearly all he says concerning them. I do not think, however, he is right in condemning Violet Hill as looking pale, and washy, and meagre by the side of Mrs. Vincent Fenn, Red Dwarf, and Shakspeare. Violet Hill ought not to be classified as a scarlet, which these three are. I have always of late years been very much impressed in favour of Violet Hill, but this year has more than ever confirmed me in my favourable impression, as it has been far superior to any other Geranium in the garden; and while other plants have gone to leaf and grown leggy, it has been full of flower, compact, and dwarf to the last. One of its especial merits to my mind is that it is not a scarlet but a soft violet cerise, and that it gives a mass of colour without being garish. Those of Mr. Pearson's that have undoubtedly a good deal of Violet Hill blood and type are Miss Rose Peach, Mrs. Hole, Amy Robsart, Lady Louisa Egerton, Chunder Sen, and Red Dwarf. I am still inclined to think Miss Rose Peach by far the best pink I have yet seen. *Amaranth* has too much lilac; and *Florence Durand*, which is nearly alike, is with me the better of the two, the trusses of *Amaranth* being too close. Chunder Sen has a better truss than Red Dwarf, and will make a first-rate light scarlet bedder. I think none of Mr. Pearson's scarlets has surpassed my own namesake in point of colour (a very pure scarlet crimson), and for size of truss. I only fear the stem will not have the power of supporting the very large truss. Of deep crimsons the Rev. J. F. Fenn is an improvement on any Mr. Pearson has yet sent out.

However, I am anticipating some notes on Geraniums which I intended to send later on, and these remarks were only called forth in advocacy chiefly of Violet Hill, and also because I was glad to find that in spite of the tendency to growth which the hot forcing weather there has been at times this summer after rains has caused, Mr. Read could speak favourably of the compactness of some of the best of Mr. Pearson's Geraniums. This is the point we want to aim at now. We have plenty of strong-growing kinds in every shade of colour, but our really good dwarfs may be numbered on two hands, and then when we have them many persons discard them and say they will not grow, and propagate the coarser kinds instead, because they will not be at the trouble to give them good treatment. An older variety of Mr. Pearson's, *Douglas Pearson*, has been with me this year all that could be wished for; and C. Casbon is another of the really dwarf type.—C. P. PEACH.

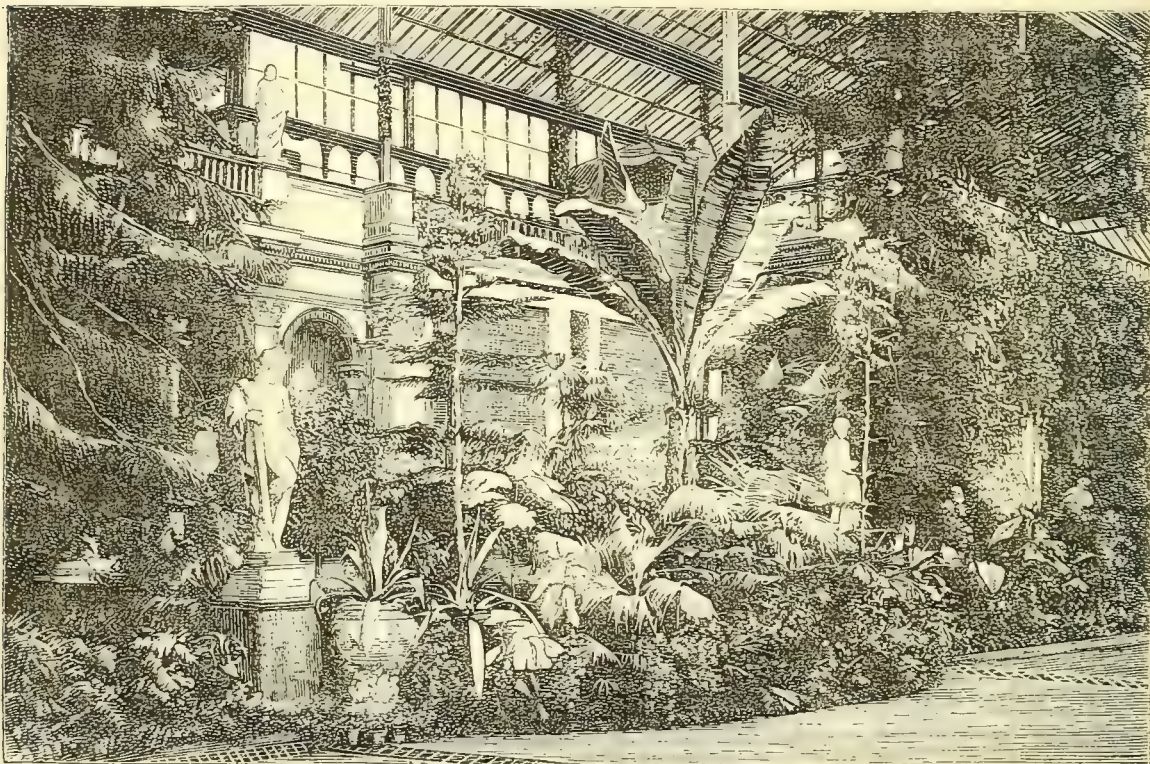
AGAVE AMERICANA.

THE first of our herbalists who mentions the American Aloe is Parkinson. In his "Theatrum Botanicum," published in 1640, he says, "It grew first in America, which being brought into Spain was from thence spread into all quarters." He also observes on its early flowering in the hotter countries, "but never in these colder," so that at that time we may conclude it had not flowered in England, although we know that it had flowered in France and Italy. The first instance recorded of its flowering in England is in the garden of Mr. Verspritt, at Lambeth. This was before the year 1698, and was considered a very rare occurrence. A few years later several instances of the blooming are known. The two specimens now flowering in the conservatory in the Royal Horticultural Society's garden at South Kensington were cultivated

at Herriard Park, near Basingstoke, Hants, the residence of F. J. Jervoise, Esq., and are very creditable to the gardener, Mr. Chilvers. The flowering stems are about 16 feet high, and the flowers are thousands, for there are a succession of them for nearly three months. Placed, as they are, on each side of the Abyssinian Banana, *Musa Ensete*, and surrounded by *Araucaria excelsa* and other plants from warm climates, the group as represented in our engraving is a good illustration of tropical vegetation.

Never since the conservatory was erected under the direction and from the design of Capt. Powke, in the year 1861, has it been so beautifully, so bounteously, and so unfailingly decorated as since it has been under the superintendence of Mr. Barron. At the present time the group represented occupies

the centre of the north side of the conservatory; a noble specimen of the Abyssinian Banana, as already stated, being in the middle, with the two American Aloes on each side of it. In front are Caladiums, *Dracenas*, Ferns, and other fine-foliaged plants, with an edging of *Isolepis gracilis*. At the back are *Araucarias excelsa* and *Bidwilli*, and on each side of these again are two magnificent specimens of *A. excelsa*, which, though about 30 feet high, are in boxes little more than 2 feet square. On the same side the borders are very tastefully filled with *Latania borbonica* and other Palms, Caladiums, flowering Begonias, Phloxes, *Lilium speciosum rubrum*, and miscellaneous flowering plants, the whole edged with *Alternanthera versicolor* and *Selaginella denticulata* alternately. At intervals are placed Mr. Eyles's large semicircular wire baskets



American Aloes at South Kensington.

variously filled with *Begonia weltoniensis*, *Richardsii*, Fuchsias, *Petunias*, *Eragrostis elegans*, variegated *Hydrangea*, *Globe Amaranths*, with, in the centre, *Lilium speciosum rubrum*, *Amaranthus salicifolius*, and other plants. The opposite, or southern, side of the conservatory is chiefly occupied with Palms and ornamental-leaved plants.

This Agave is not merely an ornament, for, as stated by Dr. Hogg in his "Vegetable Kingdom," "the root, as well as the leaves, yield excellent fibre, called Pita fibre, which is separated by bruising and steeping them in water. The Mexicans make their paper of this fibre. The expressed juice of the

leaves, evaporated, is said to be useful as a substitute for soap. In Mexico the fibre is converted into twine, cord, and rope; and Humboldt describes a bridge over the river Chambo, in Quito, 131 feet span, of which the main ropes, 4 inches in diameter, were made of the fibres of the Agave. Another important product of this plant is a kind of wine, called pulque, made from its very sugary juice. By cutting out the inner leaves the juice flows in great abundance for several months; and when evaporated by heat it yields syrup, or even sugar; and when fermented it forms pulque, of which the Mexicans make a great trade."

EARLY GROSSE MIGNONNE AND OTHER PEACHES.

ACCUSTOMED to growing this Peach, and seeing it grown by others to a size not more than medium (the size attributed to it by most, if not all, our fruit authorities), I was surprised last year and also this to find the fruit borne by a tree in a pot to be large, and of such a form as to convince me this was the only tree of the "true sort" I had seen, which Mr. Rivers (*vide* "Catalogue of Fruits") informs us is rare. I am now fully convinced that the trees I had grown, or of which I had seen fruit, and that I considered to be of this kind, were not so—certainly not worthy to be compared to the latter and "true sort." All the others that I had grown or considered

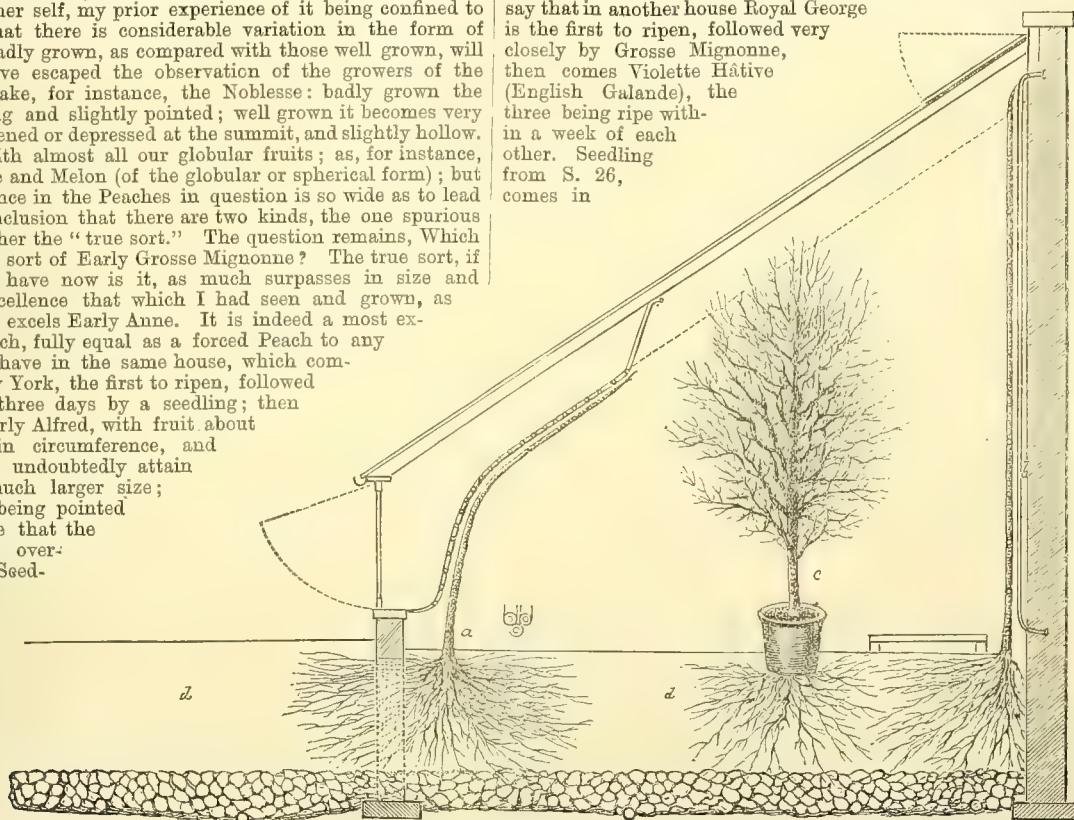
to be the Early Grosse Mignonne had leaves crenated, with globose glands; flowers large, bright light red; fruit medium size, globular, depressed at the summit, inclining to be long or pointed. The "true sort," if the one I have now be it, has leaves crenated, with globose glands; flowers large, bright light red; fruit large, round, depressed, and slightly hollow at the summit; skin slightly downy, pale yellow on the shaded side, mottled with pale red towards the sunny side, which is of a pale red colour; flesh pale yellow, slightly rayed with red next the stone, from which it parts freely, melting, juicy, and most excellent; stone small. It differs only from

Grosse Mignonne in the fruit ripening about ten days earlier, and being paler in the colour of the flowers, and in the skin being paler coloured on the shaded side as well as on the sunny side, which in Grosse Mignonne is a deep red. The fruit of Early Grosse Mignonne is quite as large as that of Grosse Mignonne, good specimens measuring 10 inches in circumference, and weighing 8 ozs. It ought to be said that the fruit is not nearly so downy as that of Grosse Mignonne, and not half so much so as the kind I have known as Early Grosse Mignonne.

There can only be two conclusions arrived at—either, first, the kind I have hitherto known as Early Grosse Mignonne was not the true sort; or secondly, the kind is so much improved by being grown under glass and in heat as to lose every semblance of its former self, my prior experience of it being confined to walls. That there is considerable variation in the form of Peaches badly grown, as compared with those well grown, will hardly have escaped the observation of the growers of the Peach. Take, for instance, the Noblesse: badly grown the fruit is long and slightly pointed; well grown it becomes very much flattened or depressed at the summit, and slightly hollow. It is so with almost all our globular fruits; as, for instance, the Orange and Melon (of the globular or spherical form); but the difference in the Peaches in question is so wide as to lead to the conclusion that there are two kinds, the one spurious and the other the “true sort.” The question remains, Which is the true sort of Early Grosse Mignonne? The true sort, if the one I have now is it, as much surpasses in size and general excellence that which I had seen and grown, as Early York excels Early Anne. It is indeed a most excellent Peach, fully equal as a forced Peach to any of those I have in the same house, which comprise Early York, the first to ripen, followed in two or three days by a seedling; then follows Early Alfred, with fruit about 9 inches in circumference, and which will undoubtedly attain a very much larger size; the fruit being pointed is evidence that the tree was over-cropped. Seed-

Gilpin, Esq.; of this there is also a painting by Mr. Hooker. The fifth was discovered on the wall of Sir John Arundel, at Huntingdon, in June, 1802. A sixth instance occurred in the garden of Mr. Wilmot, at Isleworth. The tree in this garden which produces fruits with both downy and smooth coats, or, in fact, Peaches and Nectarines, is the Royal George, and seldom fails to produce them annually.* I have also seen Peaches and Nectarines on the same tree in both 1852 and 1853 in the garden of Sir William M. Milner, Nun Appleton, Tadcaster, Yorkshire. The tree was the Royal George. No instance that I know of has been recorded of a Nectarine having fruits with downy skins. Mr. Rivers has, however, raised several Peaches whose parents were Nectarines.

Regarding the ripening of Peaches, I may say that in another house Royal George is the first to ripen, followed very closely by Grosse Mignonne, then comes Violette Hâtive (English Galande), the three being ripe within a week of each other. Seedling from S. 26, comes in



d, d, Border.

ling from S. 24 is ripe at the same time as Early Alfred. Noblesse and Royal George ripen a few days before Elruge and Stanwick Elruge Nectarines. Early Grosse Mignonne ripens with Noblesse, and is followed by Grosse Mignonne in about a week. Thus in one house there is a difference of fully three weeks between the first to ripen—Early York, and the last to commence ripening, Grosse Mignonne.

Will any of your correspondents inform me if Early Alfred Peach has usually a smooth Nectarine skin? Mine had both last year and this a smooth or Nectarine skin, and is as much a Nectarine in that respect as Elruge, Stanwick Elruge, Violette Hâtive, Albert Victor, Rivers's Orange, White, or any other kind of Nectarine. Can it be that this sort (Early Alfred), has so soon reverted to the condition, as regards its skin, of its parent, Hunt's Tawny Nectarine? Evidence of a Peach tree bearing fruits with both downy and smooth coats, or, in fact, Peaches and Nectarines, are not wanting, for it is recorded that “The first instance of which we have any account of the fruits being observed growing upon the same tree is in a communication between Peter Collinson, Esq., and Linnæus. The second occurred at Londesborough, then the residence of the Earl of Burlington, and was visited by several of the scientific people of the day. The third instance is commemorated by a painting in the possession of Mr. Lee, accompanied with a dissection of the two fruits. The fourth instance was observed at East Sheen, in the garden of William

along with Rivers's Orange; and Violette Hâtive Nectarines, Barrington and Bellegarde Peaches succeed the Nectarines in a week. Seedling from S. 149 comes in at the same time as Barrington; Desse Tardive is ten days to a fortnight later, and Albert Victor Nectarine closely brings up the rear, and both are very large, especially Albert Victor Nectarine, which is truly of immense size. It likes heat, and well ripened is most excellent. There is a difference of nearly a month between the first and last to commence ripening.

I would also note, that in planting a Peach house I have found it true economy to plant the back wall with trees at 3 feet apart and train the shoots upright, the principal ones 1 foot 6 inches apart, and the side shoots on them at every foot in length, stopping these when they have grown 10 inches; all other shoots to be pinched to two leaves; and any laterals they or the other stopped shoots may make keep pinched-in to one leaf, repeatedly throughout the season. These trees will be masses of bloom the second spring, will yield a fruit for every square foot of wall covered, and keep in a good bearing state for about four years, or as long as we wish. Trees also in pots at about 4 feet apart—mine are 4½ feet, and in 14-inch pots—are very useful, giving a couple of dozen fruit annually for four years. The trees on the back wall will give

* I am unable to state from whence the preceding is a quotation, the part in my possession being a scrap, probably from Loudon's “Gardener's Magazine.”

660 Peaches and Nectarines when the wall is fully covered, as it will be in four years at the distance the trees are planted, and the trees in pots 336, or very nearly one thousand in all. These will not in any way interfere with the permanent trees, which in the usual way, planted in front and trained to a trellis about 1 foot from the glass, take fully three years before they are of much use. When the permanent trees have grown to the extent of the roof trellis, the trees in pots as well as those against the back wall will be of no further use and must be removed, which as regards the pot trees is no loss, but the back-wall trees are a complete loss.

Now, having a house of the kind named, with trees on the back wall, a row of trees in pots, and also trees planted in front that are ultimately to cover a trellis the whole extent of the roof, as shown by the dotted lines in the accompanying section, the question arises whether this is the best mode that can be adopted with a view to securing the greatest amount of produce. I think it is not, for when the front trees (a) cover the whole of the roof trellis, or 60 feet by 16 feet, we have 960 square feet, answering to as many Peaches, and we ought to take into consideration that from seven to nine years must elapse before we can calculate on a full crop, which means a lessened number of fruit annually downward to the year of planting; or—first year, 0; second, 120; third, 240; fourth, 360; fifth, 480; sixth, 600; seventh, 720; eighth, 840; ninth, 960. This is reckoning for 2 feet of growth; but as the trees will be two or more feet high to begin with, we should on that account reduce the years for covering the trellis by two, or to seven, as the years required to bring us a maximum of produce.

Instead of acting on this plan, let us compare it with the mode of retaining the whole of the trees, as shown in the section, as a permanency—i.e., the trees on the back wall (b) planted 3 feet apart, the trees in pots (c) at about 4 feet apart, and the trees in front (a), that are not allowed to cover more than 7 feet of trellis—not going higher than where the dotted line begins. Under this arrangement we should have the first year, 0; second, from front trees 120, pot trees 168, back-wall trees 120, or 408; third, front trees 240, pot trees 336, back-wall trees, 7 feet trellis covered, 420, or 996; equal to the full produce of the house in the eighth year on the roof-trellis system. But to continue. Fourth year, front trees 360, pot trees 336, back-wall trees 600, or 1296; fifth, the house in full bearing, front trees 420, pot trees 336, back-wall trees 660, or 1416 Peaches and Nectarines, as compared with 480, the produce of trees on front-roof trellises, and with the trees trained on a roof-trellis and in full bearing, giving us 960 fruits as against 1416, being a clear gain annually of 456 fruits, or wanting only 24 fruits to be half as much again from the trees as per section. We can safely tax the pot trees with 24 fruits needed to give us the 480 fruits, making one-half more produce in favour of keeping the trees, as shown in the section, permanently.

The mode above described appears to me the best arrangement of trees in a Peach house. By planting trees in front of the house, and training them to a trellis so as to cover entirely the roof, we cut off all the sun's rays; the trees on the back wall will not fruit, nor can any be grown in pots. We secure 16 feet of roof trellis, and cut off 11 feet of back wall, and 4 feet required for the pot trees; in fact we secure for 16 feet of Peach trees on the trellis that amount of direct solar rays, a vast proportion of these being thrown back into space and lost to the house. By the other plan we have 7 feet of trellis covered with Peach foliage obstructing the direct solar rays; consequently we secure 9 feet of direct sun's rays that are in a small degree obstructed by the leaves of the trees in pots, but a great many reach the back wall, and are thence thrown back into the house, so that the pot trees have the full benefit of the rays admitted, not only in the matter of light, but also in that of solar warmth to the house. Apart from the admission of solar light and heat to the house, I consider there is a gain of another kind that may justly be claimed for the pot trees, and keeping the back wall covered with trees in a bearing state. It is that the trees on the back wall ripen a week earlier than the pot trees, and they are fully ten days before those ripening on the front trellis, or nearly three weeks' difference between the back and front trees.

Another thing and I have done. It is the only difference that I can observe between trees in pots, and those planted out and trained on trellises, in the size of fruit they produce is, on equal terms, nothing at all. Either overcropped will have small fruit; neither with more than one fruit per square foot

of surface covered will have other than fine fruit, with management suited to healthy growth; and whilst on a trellis directly under the glass one fruit will be produced to every square foot, it will not be finer than two on a pyramid that receives but one foot square of the obstructed solar rays. The former system of culture obstructs the sun's rays, whilst the other admits them to the house, and husbands them.—G. ABBEY.

BOILER TRIALS AT BIRMINGHAM.

We have the pleasure to be able to inform you that the Judges, whose impartiality has been so unwarrantably questioned, have re-affirmed their decision, and this again has been confirmed by the Local Committee of the Show. The result is that we have this day received the gold medal which was originally awarded to us. Allow us a concluding word or two.

1st, The price given in to the Judges, and on which the award was made, was £22, and not £15 10s. We are issuing our price lists at that amount.

2nd, The alterations we made in our setting and fittings did not alter the boiler itself; and to prove that no partiality was shown to us we have only to state that one of the competitors, whose signature is appended to the protest, was actually allowed to take out the solid back of his boiler and substitute a waterway back for it, which is an alteration of the boiler in the true sense of the word.

3rd, As to the fuel we used up to and from three to four o'clock on the day in question, the fuel supplied was exactly the same as that supplied to others. At that time, however, the stock provided by the Judges was exhausted without their Secretary being aware of the fact, and he was unable to obtain any of the same quality as that previously used; but the cost of fuel and quantities used were, as the competitors all well know, a very material consideration with the Judges in determining their award.—HARTLEY & SUGDEN, *Atlas Welded Boiler Works, Halifax.*

THE published protest of Mr. Cannell and the other unsuccessful competitors against the decision of the Judges, and the reply of the latter thereto, were laid before a meeting of the Local, Implement, &c., Sub-committee on Tuesday last, Mr. T. B. Wright in the chair. On the motion of Mr. Councillor Lowe, seconded by Mr. Quilter, it was unanimously resolved—"That Mr. Hallam be requested to return the protest to Mr. Cannell, and to explain to him that by the conditions under which the trials of boilers were made, no appeal from the awards can be entertained; and this Sub-committee hereby expresses its implicit confidence in the integrity and ability of the gentlemen by whom those awards were made." On the motion of Mr. Badger, seconded by Mr. Vertegans, it was further resolved—"That a copy of the foregoing resolution be forwarded to each of the horticultural journals."

[We must decline inserting any more communications on this subject except as advertisements.—Eds.]

NOTES AND GLEANINGS.

WE regret to have to record the death of Mr. WILLIAM PRINGLE LAIRD, of the firm of Laird & Sinclair, of Dundee, which took place on August 14th. He was a brother of Mr. Laird, one of the partners in the well-known firm of Downie, Laird, & Laing. He was much esteemed in his business capacity, and his advice and assistance much sought for on all horticultural subjects.

—WE have also to notice the decease of Mr. GEORGE PARSONS, of Western Road, and Keymer, Brighton, long known in connection with the horticultural shows of that town.

—GLASGOW INTERNATIONAL FRUIT AND FLOWER SHOW.—We have made arrangements for a full report of this Exhibition, which we believe will be one of the largest and most interesting of the year. Eight hundred pounds will be won by the prizetakers, and the list of Judges which we published last week is an evidence that the most deserving are intended to be the winners. The Show will be open for three days, commencing on the 11th of this month.

WORK FOR THE WEEK.

KITCHEN GARDEN.

KEEP the hoe and fork constantly at work amongst all advancing late crops. The seedling plants of *Cabbage* intended to stand through the winter must now be pricked out in nursery-beds of light soil at 5 inches apart; this will be found of great advantage by inducing a stocky hardy growth. Con-

time to make successional plantations of *Endive*. Some of the first planted out will now be in good condition for tying-up for blanching; a few only at a time should be tied-up, and these should be tied loosely to allow the heads to swell. A small patch of *Bath Cos Lettuce* sown now will, if the autumn prove mild, be more valuable than that sown earlier. Now is the best time to make *Mushroom beds* out of doors. No time should be lost in getting the crops of *Onions* stored when fully dry. As the ground from which they are taken is generally used for Cabbage, it should be immediately trenched-up; if manure is necessary, let it be laid on the top of the trenched soil and fork it in. If, however, the ground was well manured for the *Onions* it ought to carry the Cabbages through, and they will always come the better for it, because if too much manure comes in contact with the roots in the autumn it induces a succulent luxuriant growth, which renders the plants far more liable to injury from alternations of frost and thaw in the winter. Proceed with the earthing-up of *Celery* in proportion to the demand. Some of the very latest crop may also be planted in rows to stand through the winter. The haulm of *Peas* laid by now in a dry place is a good material for covering *Celery* during severe frost. *Radishes* may still be sown. Thin-out winter *Spinach*; the plants should stand at least 8 inches apart, and the ground must be constantly stirred about them. Occasional dustings with quicklime will also be necessary if slugs appear.

FRUIT GARDEN.

Where wasps are troublesome means must be taken to preserve ripe fruit from their depredations, and *Plums* and *Peaches* had better be netted-up, as wasps, if at all numerous, soon do serious damage to these. Also look frequently over any varieties of *Pears* ripening, and gather those that are fit, for if allowed to hang after they are ripe the wasps will attack the fruit before it is fit for gathering, so that the crop will probably be spoiled unless it can be netted-up. When *Currants* are covered with mats—which, by-the-by, are very inferior to close nets for this purpose, and much more expensive—the trees should be uncovered occasionally on fine days, so as to expose the fruit thoroughly to the air in order to prevent their being injured by damp, &c. Trim and dress *Strawberry* plantations, and be careful to injure the leaves of the plants as little as possible; avoid deep digging between the rows, which only injures the roots, as the *Strawberry* succeeds best in a somewhat firm soil.

FLOWER GARDEN.

At this season much labour and attention will be required to keep up an attractive appearance. Plants which have ceased blooming should be cut down before they look unsightly, and annuals that have become shabby should be pulled up and removed. Gaps in flower borders, and empty flower-beds, are not pleasing to the eye at any season, and still less so now that the beautiful in nature is showing evident symptoms of decay. Have recourse to the reserve stock of *Fuchsias*, *Calceolarias*, *Geraniums*, and other similar plants in pots; plunge these in their pots in the empty beds and vacant spaces in the borders, to remain till the first appearance of frost. Strong plants of biennials, such as *Sweet Williams*, *Wallflowers*, *Canterbury Bells*, &c., may likewise be planted out into open spaces, that they may get well established before winter. If previous directions have been attended to, the propagation of next season's bedding stock will by this time be well advanced; and where, from the pressure of other work or various causes, this is not the case, every possible dispatch must be used while the weather is favourable for such work. Where cuttings of *Verbenas* and such-like plants have yet to be put in, they should be inserted rather thinly in deep pans or shallow pots, in which they can be wintered, as they will be better established in this way than would be the case if they were potted-off before winter. I have frequently found late cuttings managed in this way wintered fully as well as stronger plants; and except plants intended to furnish cuttings in the spring, it is immaterial how small bedding plants are before winter, provided they are well rooted without being raised in a close warm atmosphere, which renders them sappy and tender. Many persons, through anxiety to procure large plants, keep bedding-out stock close and moist until late in the autumn, and frequently in frames on dung-beds where size is soon obtained; but plants treated in this way are necessarily so soft and tender, that it is almost impossible to carry them over the winter without serious loss. Therefore, avoid keeping such plants too warm after this season; and if they are placed in bottom heat give air at night, and whenever it can be done

without the cuttings flagging, so as to prevent weakly growth. Routine operations will principally consist in keeping down weeds by weeding, hoeing, and raking. Mowing will not be needed so much as heretofore, but the lawn and grass edgings must be kept in good order by frequently sweeping and rolling. Continue to tie-up and support all plants that require such aid; gather seeds of choice plants, and secure them as previously directed. Walks in the vicinity of deciduous trees should be swept evening and morning, and rolled at intervals. Watering, too, must not be neglected, especially in the case of plants in vases and baskets.

GREENHOUSE AND CONSERVATORY.

Where valuable stove plants have to be kept in the conservatory while in bloom, they will require careful management to prevent their being injured by damp, and they must not be overwatered at the root, as stove plants are soon injured in a low temperature if kept too wet. Give air freely on bright days; but if the house contains many stove plants it will be advisable to shut up rather early in the afternoon, so as to retain a little warmth for the night; and in the event of wet cloudy weather setting in, it will probably be found necessary to use a little fire heat to dispel damp and preserve the blossoms of tender plants, and this should be seen to before handsome specimens get disfigured or ruined for the season, for as those in bloom are not over-plentiful about most places at this season they are worth caring for. Keep everything in these houses as clean and neat as possible, removing decayed leaves, flowers, &c., immediately they are perceived, and examine pot specimens frequently, particularly such as may not occupy the most suitable places, turning them partly round in order to expose all their sides equally to light and air.

PITS AND FRAMES.

Make a sowing of *Nemophilas*, *Collinsias*, *Leptosiphons*, and other hardy annuals for next spring. The Intermediate and Ten-week Stocks will require to be pricked-out in pans or boxes, likewise the *Schizanthus* of sorts; place them in a cool close frame till well established. Pot-off cuttings of *Verbenas* and other plants as they strike root. See that cuttings in the frame or tank-pit are not suffering from drought, damp, mildew, thrips, or aphids; if so, apply the usual remedies. A sharp look-out after slugs will be now be requisite here.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

THE showers at the end of the month rendered it necessary to dust with wood ashes, soot, and lime, seedlings of *Lettuces*, *Cauliflower*, and *Spinach* just coming through the ground, as a few snails or slugs would at that time soon clear off beds and rows. All except the last-sown spring *Onions* have been taken up and spread out to dry before being housed or stringed. We shall give the latter a few days more, but after the tops fall down and show the least signs of getting yellow, the bulbs rarely increase much more in size, and the longer the roots remain in the ground afterwards the less likely will they be to keep plump and sound. Young *Onions* coming through the ground now are apt to be nipped over by rabbits and wood-pigeons, and therefore a dusting to make them unpalatable is one of the best means of securing them. We had our winter *Onions* considerably nipped last year at the end of October, but by that time the roots had become strong enough easily to recover themselves. It is very different when seedlings like little needles are cropped over.

We raised *Garlic* and *Shallots* to dry thoroughly, as these cannot be dispensed with in the best cookery. We once knew a place, and a large one too, where nothing of the *Mushroom* or the *Onion* tribe was allowed to be grown. A gentleman who did know what was good cooking, held up his hands in astonishment, and said, "Save me from ever dining there!" The routine work of sowing for succession, watering, gathering, hoeing and forking over ground, has been merely a repetition of previous weeks' remarks.

FRUIT DEPARTMENT.

Commenced cleaning out rows of *Strawberries* intended to be left. What are to be destroyed will be trenched down. As the surface soil is rich from dressings, and the *Strawberry* tops placed at the bottom of the trench will be well decomposed before the roots of other plants reach them, Cabbage and *Cauliflower*, or other crops needing rich soil, come in well after such beds or quarters of *Strawberries*. It often saves labour to dig down deeply the remains of previous crops in-

stead of barrowing or carting them away. When sometimes we could not do this well with the heavy remains of winter Greens, we have had them pulled up and left on the ground for a number of days, and if these days were sunny the stumps and foliage got into small compass, and were easily moved to the rubbish or the charring-heap. Such stumps fairly dried char well. It is necessary to burn rubbish to ashes at times; but though the ashes are useful, the produce is very small in comparison with charring, and charred rubbish suits almost everything.

Raspberries.—Commenced clearing these by removing the canes done fruiting and thinning-out the others, leaving just enough of the best, that the sun and air may duly ripen and harden the stems or shoots. This, under ordinary circumstances, insures a good general crop the following season. If the ground between the rows can be spared, a good mulching of rotten dung will greatly assist the roots all through the winter. We generally mulch the rows, and have Lettuces or Cabbages in the middle. These do very well until the free growth of the Raspberries in summer gives the plants too much shade. Even the canes, when they lose their leaves in autumn, still afford a little shelter, and break the force of the wind for the benefit of the low plants between the rows.

The showers seem to have improved Apples and Pears considerably, but, on the whole, we fear that even our limited crop will not be so large and good as usual. It is a great drawback to find Apples scarce, they can be used for so many purposes. Several holders of Apple orchards have told us that they have not a single Apple, instead of having scores of bushels. Such seasons as this may lead to stopping the cutting-down of orchard trees, and greatly lessening the fruit supply in many establishments. In one large place it is proposed to do away with the wall trees that yielded the chief supply for the establishment, and to cover them with the best kinds of Ivy, as being so much more pleasing to look at all times. But what about the fruit? Will green or variegated leaves be as good in a dish as rich luscious fruit? "Of course we can buy." That is true; but we know pretty well what the buying of everything will end in, and what will be the comfort involved to all concerned.

Proceeded with potting Strawberries, as alluded to last week, watering houses, damping the floors in warm days, leaving a little top air on all night to prevent moist vapour collecting, and in very hot days, to save watering, we spattered the glass with water just whitened. This is the simplest of all modes of shading for a temporary purpose.

Sulphur-coating Hot-water Pipes.—We took occasion also to cover our piping with sulphur made into a paint with soft-soap water, and daubed any exposed part of a wall near the apex of lean-to houses with the same, as a security against red spider, thrips, &c. No harm will result from sulphur fumes if the pipes are not hotter than from 160° to 170°, above that temperature there is danger to tender subjects. For Black Hamburg Grapes just setting we should not like the pipes to be the least above 160°, and for Maiden-hair Ferns we should not like to expose young fronds to a greater heat than 150° in the pipes, if these pipes were coated with sulphur. We once saw the young fronds of some scores of Maiden-hair spoiled by sulphur fumes, but the pipes were between 190° and 200° in temperature. It is hardly safe, therefore, to put sulphur on a warm flue, as that near the fireplace may easily become too warm. In such a case it is safer to put the sulphur in a vessel of water, and place that vessel on the flue.

Sulphur thus applied is often a great help for keeping intruders at a distance; but it must not be allowed to become too hot, or the fumes will be as destructive to vegetable as they are to insect life. When we once used an iron stove to help a house a little, it would have been madness to paint the outside of the stove with sulphur, but we had a large, moveable, iron pan set on the top, supplied with water, and into that we used to stir a pound of flowers of sulphur at a time. The water in that evaporating-basin was rarely above 160°, but the vapour given off had a fair portion of sulphur in it that helped to keep the red spider at bay. Sulphur thus may be made a good servant, but it is worse than a despot if it obtains the mastery. We have seen many a bunch of Grapes when young much injured by too much heat in the pipes coated with sulphur.

This might with propriety lead to another remark—that it is no true economy to study with how few feet of piping a house can be heated by making the water boiling hot. It will be found most economical in the end to have more piping, and

never have the water at its highest within 30° or 40° of the boiling point. Hardly anything at all tender will long stand the unhealthy heat from pipes with water in them nearly at the boiling point. Even in cold weather we should sooner let the temperature fall 5° to 10° below the usual standard. Old gardeners know whenever they enter a house if the pipes are overheated.

ORNAMENTAL DEPARTMENT.

Both lawns and walks in the pleasure grounds are now in good condition. For other matters we must refer to previous weeks' notices.—R. F.

TRADE CATALOGUES RECEIVED.

R. Parker, Exotic Nursery, Tooting.—*Catalogue of Hyacinths and other Bulbous Roots, Fruit Trees, &c.*
Dick Radclyffe & Co., 129, High Holborn, London, W.C.—*Catalogue of Dutch Bulbs, Fruit Trees, Garden Requisites, &c.*

TO CORRESPONDENTS.

N.B.—Many questions must remain unanswered until next week.

BOOKS (G. R. S.).—Three books are published at our office, price 1s. 6d. each, which will give all the information you mention—"The Garden Manual," Keane's "In-door Gardening" and "Out-door Gardening." The whole may be had free by post if you enclose 4s. 8d. with your address. (J. B.).—Keane's "Out-door Gardening," price 1s. 6d., and "Flower Garden Plans," 5s., can both be had from our office free by post, with 4d. added for postage. They contain all you need, probably.

PRUNING MARÉCHAL NIEL ROSE (C. P., Herts).—Do not shorten the strongest shoots, but thin out the weak; tie the shoots down umbrelliform to a light wire frame, and it will make a handsome weeping Rose bush. Maréchal Niel requires a warm aspect and good well-decomposed farmyard manure forked into the roots in winter. You may thin out the weaker shoots in autumn, and if any of the other shoots are much longer than the others, shorten them in the spring for the sake of symmetry; but as a rule Maréchal Niel does not like the knife.

GRAPES RUSTED (J. S. A.).—The berries you sent were rusted, probably owing to the steam resulting from sprinkling the hot-water pipes whilst very hot while the Grapes were in a young state and the skin of the berries tender. Rust is also caused by sudden changes of temperature or admitting a current of cold air, and often by the pipes being coated with sulphur. We think the steam produced by wetting the pipes the most likely cause of the rust in your case. The large bunches of what you term tubers were probably air roots, they having now dried up. The Grapes not colouring well is probably a consequence of too heavy cropping; and the want of bloom we should attribute to syringing being continued too long.

SELECT HARDY PERENNIALS (F. L.).—*Campanula aggregata*, *Delphinium alpestricoides*, *D. Belladonna*, *Dielytra spectabilis*, *Erigeron speciosus*, *Iris reticulata*, *Lychnis Haageana*, *Eriogonum macrocarpa*, *Papaver nudicaule*, *Phlox verna*, *Spiraea japonica*, *Thalictrum anemoniflorum plenum*, *Trollius europaeus*, *Tritoma Burchelli*, *T. Uvaria glaucescens*, *Statice latifolia*, *Iberis Tenoreana*, *Geum coccineum grandiflorum*, *Gentiana acaulis*, *Draba aizoides*, *Cynoglossum appenninum*, *Anemone appennina*, *A. fulgens*, and *Hepatica angulosa*. A majority of the Sedums are perfectly hardy, and yet need a well-drained and light soil.

STOPPING FRUIT TREE SHOOTS (Idem).—So long as you have stopped or pinched none but the wood shoots you will not have destroyed any fruit buds; but, on the other hand, stopping causes the formation of spurs, which have the fruit buds at their apex. By stopping they are more fully exposed to light, and the vigour of the trees is directed towards the formation of the spurs instead of being expended in wood shoots that in any case must be partly if not wholly cut away at the winter pruning. Your treatment is correct.

CAMPANULA PYRAMIDALIS (C. C. P.).—It is not by any means uncommon for plants of this to have different coloured flowers one season as compared to another. Rarely, however, are white and blue flowers produced at the same time on one plant: either the flowers are all blue or all white, as in your case. It is a curious fact. Next year, if the plants survive, they may have flowers of the normal colour.

GREENHOUSE PLANTS FOR FLOWERS IN AUGUST (Novice).—*Crowea saligna* major, *Pieroma elegans*—these are what we know of a blue colour. *Habrothamnus elegans*, *Lapageria rosea*, *Cassia corymbosa*, *Mandevilla suaveolens*, *Nerium Oleander splendens*, *Thibaudia acuminata*, *Phonocoma prolifera* Barnesii, *Erythrina crista-galli*, *Vallota purpurea*, *Witsenia corymbosa*, *Plumbago capensis*, and *Agapanthus umbellatus*. As the *Mandevilla* and *Lapageria* are climbers and you may not have convenience of growing them, we therefore name a few Heaths—*Erica eximia superba*, *E. obtata purpurea*, *E. princeps coccinea*, *E. shannoni*, *E. vestita coccinea*, *E. tricolor* Wilsoni, *E. Massoni* major. Those named may not flower exactly at the time you want, so that you will need to forward those that will be too late, and retard those which are too early. The varieties of *Lilium speciosum* (lancifolium) are fine; so is *Tritonia aurea*, but they are hardy plants.

PEACHES EATEN BY EARWIGS (E. T. M.).—We cannot help you to a specific against the host of enemies besetting your Peaches. Trapping will be your only remedy at this stage. Good traps are made by cutting bean-stalks in lengths of 5 or 6 inches. Place them horizontally in different parts of the trees. The traps should be examined daily, and the earwigs blown out into boiling water. Centipedes will also secrete themselves in the beam-stalks. For the woodlice we know of no better plan than to cut a large Potato through the middle, take out the inside, and cut out of each side a piece half an inch deep and an inch long. Secure the two halves together by a piece of wire thrust through. The woodlice will enter the Potato through the opening, and can be destroyed whenever discovered, and the trap re-adjusted. A number of these traps will soon thin the ranks of the woodlice. They should be placed in the forks of the branches. The wasps you must also trap. Fill some ginger-beer or lemonade bottles to one-fourth their depth with beer

sweetened with treacle, and hang them up near the fruit. The wasps should be emptied out, and the beer renewed. Destroy their nests.

AMARANTHUS SALICIFOLIUS CULTURE (*Goddess*).—It does not require more than the temperature of a greenhouse, but, like all half-hardy annuals, requires to be grown in heat or a hotbed until well established, or up to June. Sow the seed in March. It should have a light and not very airy position, and not be watered until the soil becomes dry, but before the leaves flag, and then have a thorough supply. It may be syringed overhead twice daily. Your plants are very dwarf. Ours are fully 3 feet high, and are in a greenhouse. The plants need shifting into larger pots as soon as those in which they are growing are full of roots, but the pot need not be larger than 9 inches in diameter. The plants to have fully coloured leaves require full exposure to light, and are then fine; indeed, the colours are best developed in the open ground after May. Your plant is not sufficiently advanced to show its character fully.

HARDINESS OF SEMPERVIVUM CALIFORNICUM (*A Constant Subscriber*).—It is perfectly hardy, but requires to have a well-drained soil, for if not, the growth is too late and will not stand frost. On your raised bed we have no fear of the plant going off in winter. We have no experience of *S. hirtum*, except as a rock plant, and there it is fully as hardy as the other, and will, no doubt, succeed as a bedding plant if the soil is not wet and heavy.

DISTANCE BETWEEN STANDARD ROSES (*Calamus*).—The Briar stocks you propose planting where they are to remain for budding, ought to be placed 3 feet from the walk, if 3 feet high and 6 feet apart. They may be 2 feet from the walk, and they will not for a considerable time extend over it. We should prefer them 3 feet from the walk, and if you have any nearer the walk let them be on low stems. If we were to plant as you propose we should have the standards 6 feet apart, 3 feet from the walk, and others with 18-inch stems 2 feet from the walk, the same distance as the taller standards, and midway between them. You may plant in the first instance half the distance named apart, which will be sufficient for half a dozen years, and ultimately thin-out to the full distance.

TREES FOR EAST ASPECT FENCE (*Idem*).—The aspect will be suitable for Pears, Plums, and Cherries. Your brick wall facing the north will only answer for Morello Cherries and Currants.

COMPOST FOR MYRTLE AND HELIOTROPE CUTTINGS (*A. B.*).—The most suitable soil for striking Myrtles, the Lemon-scented Verbena (*Aloysia citriodora*), and Heliotropes, is equal parts turfy loam, leaf soil, and silver sand, draining the pots well, and surfacing with half an inch silver sand. Primula and Cineraria seed may yet be sown in gentle heat, but the plants will not flower until late in the spring.

CUCUMBER FOR HOUSE (*H. H. C.*).—You do not say whether you wish for fruit in winter, but if you do, we find there is no better variety than Volunteer, which is very free-bearing and good-sized, swells well, and is of excellent flavour. If you plant a house, say now, the plants will bear well by Christmas, and until May, or later, but before autumn the fruit will become "knobbed;" therefore, we advise you to grow them in frames for summer and autumn supply, or you may plant your house in May, doing away with the plants that have borne during the winter, and your second lot of plants will carry you through the summer and up to Christmas. If you do not care for winter fruit, then plant your house in February, and the plants will produce good fruit until very late in the season. The kind we recommend for all purposes is Cox's Volunteer.

CARNATION UNHEALTHY (*A. C.*).—The plant is in a bad plight, and we do not think you will ever do any good with it. Layer it now, or put in cuttings if it is a tree kind, which we think it is; the cuttings will strike freely in sandy soil in gentle heat. The young plants will not, we think, have the tendency of the parent to become withered at the points of the leaves, a consequence of the roots being in an unhealthy state. We should winter the plant in a cool airy greenhouse, also the young plants. It is evidently a delicate sort.

WINTERING BEDDING PLANTS IN FRAMES (*Digitalis*).—It is at best an uncertain mode of wintering plants, especially Geraniums. In unheated structures the great enemy of plants is damp, to say nothing of cold, and we advise you not to try this mode of wintering them. We should have the cuttings established in boxes narrow enough to be accommodated in the room windows, and they need not be more than 3 inches deep. The cuttings put in about 12 inch apart will have plenty of room, and may be kept in the frames until severe weather commences, then they may be removed to the house, and they will only need to have the dead leaves picked off, no water being given except a little occasionally to keep them from drying up. Remove them from the window-ledge to a place safe from frost in very severe weather. Here they may remain until March, when we should have a mild hotbed made; when it has become mild and sweet put on the frame, and place a few inches of sawdust all over the bed; then pot the Geraniums in 3-inch pots, and plunge them in the hotbed. Put on the lights, and keep them rather close, but if there be much steam admit a little air. When they are well rooted and are growing freely they may have plenty of air, merely protecting them from frost. The plants will be in excellent condition by planting-out time. Your old plants we should take up on the approach of frost, preserving plenty of roots, but cutting away the long portions of these; then pick or rather strip off all the leaves, and place the plants with the root part in boxes, covering it and about 2 or 3 inches of the stem with dry sand. You may keep them in a dry cellar or other place safe from frost. In March you may pot them singly in pots just large enough to hold the roots without cramping, and place them in the hotbed along with the potted cuttings. They will soon start into growth, and when this has fairly begun cut-in any irregularities, and you will have them in a good state for planting out in May. The frames you may use in winter for *Calceolaria* cuttings, which may be planted out in nursery beds, and be protected with mats kept off the plants by hooping over the beds. Verbenas you may winter in the same way, but they require to be kept drier than the *Calceolarias*.

HEATING A VINERY AND CONSERVATORY (*O. P.*).—The best book you can have for your purpose is the "Vine Manual," price 3s. 6d., or free by post 2s. 7½d. It will be best to have the stokehole and boiler, a saddle boiler at the back of the middle of the house; then, by having a T flow-and-return, and valves on each flow, you can heat each department separately or together, but you must never put a fire on without a valve to one house being open. According as you require late or early Grapes you will require from two to four pipes round the house. Two 4-inch pipes along the ends and front would keep frost out of the conservatory. If you wanted more heat you would require three pipes. For a small place we should arrange both houses in the same way—viz., a shelf all round back and front 18 inches wide, a pathway 30 inches wide, and a platform or stage for the centre some 3 feet from the ground. Many things could be kept and grown in the vinery, except when

the fruit was getting ripe, when the fewer plants in that department the better. The main flow and return pipes could come under the pathway, and run beneath the front and end shelves. Arranging and fixing pipes has been much alluded to of late. For lasting, with common socket pipes we prefer on the whole rough yarn and red or white lead; the latter chiefly to finish with.

HEATING A SMALL CONSERVATORY (*Mary*).—If we were situated like you, we should try to do better with the stove if it has a flat top to receive a vessel of water, and has the firebox separate from the sides, or, if solid, lined with firebrick. Such a stove well regulated from the ashpit door will do wonders. Even a paraffin lamp requires attention, and if that is neglected as the stove sometimes is, where would you be on a frosty night? With regard to your objections about overheating or not having enough of heat, the room the stove occupies, the unsightliness of the chimney, &c., all these can be modified. For such a house a 3-inch pipe often cleared would be ample, and if that stood a foot or 18 inches beyond the glass roof it need not be very unsightly. The best way to clean such a chimney is with a wooden pole just less than the inside diameter of the pipe. Then the room occupied need not be much. Sometimes we sink a stove so that the top is on a level with the floor; and a brick or wooden wall round it, 6 inches from it and kept whitened, will alike prevent the heat being too strong, and yet the heat given off will be all radiated into the house, so that the plants nearest the stove, though warmer, still would not be injured. We once had a small stove in the centre of a house 70 feet long, and there were but few degrees of difference in temperature between the centre and the ends of the house. To convince an unbeliever we had the stove syringed when the house was shut up, when it was moderately warm and the vapour ascended and went along the top of the house towards the two ends, and then returned along the front towards the centre again. Our argument was that the air heated by the stove traversed the same direction as the sensible vapour thrown off by syringing. We have no fault to find with your proposed mode of heating by a paraffin lamp, only it must be a large one; and if we were to adopt the plan we should make the kettle smaller, hollow it out still more in the centre, and take a small pipe through it, say a quarter of an inch, to take off the products of combustion, and place the lamp, &c., in the house. With two such lamps placed in neat stoves we should dispense with hot-water pipes. We are doubtful if a lamp would heat such an amount of piping as you require. However, there is nothing like trying. We should prefer 2-inch pipes of zinc or tin instead of cast metal. With a little stove we could, or rather would, dispense with all the trouble of piping. Be assured a paraffin lamp cannot be kept all right without care and attention.

PRUNING PEAR TREES—STOPPING VINES (*H. H.*).—Your Pear trees should require but little pruning in October, except to thin out and regulate the young shoots. The buds at the base of the new wood will not "fill into fruit buds" if cut back in October. If you wish your trees to increase in size, where the young wood is conveniently placed so that it has space to develop, it should be left from 6 inches to a foot in length. Varieties that make slender growths should be cut-in the closest. All young wood not required should be cut back to one bud. Fruit-buds will form on other parts of the trees if you practise summer pinching or pruning. The leading shoots of your young Vines should have reached the top of the house by this time; if you have not done so there must be something wrong in the treatment. Some cultivators approve of stopping the leading shoot once in the season, others do not. You may be successful both ways. We do not approve of stopping it.

SELECT HYACINTHS (*St. Edmunds*).—The following are good and not expensive—*Red*: Madame Hodgson, Robert Steiger, Solitaire, Sultan's Favourite, Amy, L'Ami du Cœur (early). *White*: Grandeur à Merveille, Madame Van der Hoop, Queen of the Netherlands. *Blue*: Charles Dickens, Baron Von Tuyl, General Lauriston. The above are all single, and distinct in colour. For glasses you might add of double kinds, Duke of Wellington, pale rose; La Tour d'Auvergne, white; and Van Speyk or Bloksberg.

SILVER FERNS IN FERN CASE (*Idem*).—As a rule these do not succeed well in Fern cases. The fronds do not develop properly. *Gymnogramma tartarea* is the only one likely to succeed, and it will not do so unless air be freely admitted.

WINTERING BEDDING PLANTS (*Amateur*).—Your plants will keep more safely over the winter in the light sandy soil in which they are struck, than if potted in richer soil as soon as they are rooted. Verbenas will winter much more safely in the pots in which they are struck if kept through the winter in spare rooms properly heated. Putting them in frames along with *Calceolarias* does not answer well. They require to be rooted in August or early in September, and then they must be protected in a cold frame, admitting air freely in mild weather, and covering with mats during severe weather. The great enemy to Verbenas in winter is damp. Old plants of Geraniums will keep safely through the winter if taken up before frost, all the soil shaken from the roots, the leaves picked off, and the plants laid for a week or so in a shed; then tie them up in bundles of from three to half a dozen according to their size, hang them up in a cellar, and look over them every fortnight to remove any decayed parts. Their tops should not be cut unless decayed. We do not think *Echeveria metallica* could be kept safely in the same way, but it might succeed if placed in pots in the cellar, and not watered as long as the leaves remained plump. They would winter better in a room safe from frost. We do not think *Dahlia imperialis* will flower if you take it up, pot it, and place it in a glass porch; but it would probably do so if it were now established in pots, and placed in a conservatory having a temperature of 45° to 50° at night.

NAME OF NUT (*D. F.*).—It is the Ground Nut, or Earth Nut, met with in our fruiterers' shops. It is the fruit of *Arachis hypogaea*, a native of South America, but cultivated in all the Southern States of North America, in the south of Europe, in Africa, and in Asia. It is an annual plant growing to the height of 2 feet, with a trailing, straggling habit. In South Carolina this is cultivated to a great extent, and there the inhabitants roast the "nuts" as they are called, and make use of them as chocolate. When fresh, the seeds, or "nuts," have a sweet taste, not unlike that of nuts or Almonds. The natives make them their principal food, and they form an article of great consumption among the negroes. An extremely sweet fixed oil is extracted from these seeds, which, according to some, is quite equal to olive oil, and does not become rancid, but, on the contrary, improves with age. After the flowers fall off, the young pods are forced into the ground by a natural motion of the stalks; and there they are buried, and are only to be obtained by digging 3 or 4 inches under the soil, and hence their name.

INSECTS (—).—Your fly is neither a "drone" nor a "gaddy," but the great gaddy, *Tabanus fovinus*.—I. O. W. (X.).—Completely smashed.

NAMES OF PLANTS (*Aurora*).—*Sonerila margaritacea*, a native of India, requiring a stove temperature. (*Sigma*).—It is *Hæmanthus puniceus*, or Waved-leaved Bloodflower. It is a native of the Cape of Good Hope, and was first cultivated in this country a full century and a half since by Dr. Sherard. (*Downie*).—If you will send another specimen we will name it. We know of no such treatise. (*B. S.*).—*Clethra arborea*. (*Lady King*).—*Æsculus parviflora*, *Walt.*, also known as *Pavia macrostachya*.

POULTRY, BEE, AND PIGEON CHRONICLE.

ON THE INCREASE OF EGG-PRODUCTION IN FOWLS.

SOME time since I made a few remarks upon this head, and was corroborated by a friend, who gave a practical assistance to confirm my assertion that, with a little care in selecting the best layers only to breed from, we might very speedily get hens which would yield over two hundred eggs per annum. The subject has since awakened considerable interest among our friends on the other side of the herring-pond, and in the last number of the "Poultry World" Mr. I. K. Felch has some remarks to which I desire to draw attention.

I observed that the tendency of breeding for show was almost necessarily to deteriorate a breed in egg-production, and it may be well to explain how this comes to pass. It is very simple. Whatever points a breeder selects his stock for will acquire increased development year by year. If he breeds every year from his longest-tailed birds he will get a strain with long tails; if he breeds from the largest combs he will increase the size of these; if he breeds from the nearest approach to an ideal standard of colour or feather he will get nearer and nearer to that. Now, it is possible that the most perfect bird he has in point of feather may be also the best layer, and if so her progeny might show no deterioration in that useful quality; but there are many chances against this happening except in very rare instances, and hence here alone we get a cause which hinders any very great development of laying in a fancier's yard. But, still further, in order to show his chickens in the height of condition at Birmingham or elsewhere, the fancier positively retards their laying as long as he can, and usually succeeds in preventing it till the age of seven or eight months, in order to prevent the bird losing condition, and injuring the plumage by going to the nest. The effect of this repeated through successive years is very great in postponing the average commencement of laying; but further still, the size which in many breeds is sought, combined with the plump condition of show fowls, has a direct tendency to check the production of eggs in any individual bird, nature being unable to provide abundant material in both directions at once. This, again, repeated through many generations operates on the egg-production of a breed, and the effect of these causes is clearly shown by comparing at the present day the Dark and Light Brahmas. Originally precisely similar and equal in qualities, the Dark breed has required much more rigid breeding for feather, and in this country has on the average been bred to greater size; the consequence is, that it now lays a less average number of eggs than the Light.

In an article which (after the American fashion) talks a great deal about "my strain," but is, nevertheless, interesting and to the point, Mr. Felch says that so late as 1867 he could guarantee his hens to lay an average of 160 eggs per annum, besides rearing a brood of chickens. In 1864 he kept an account, and found that eight Light Brahma hens in one run, on the average between them, laid 192 eggs each, and reared eight chickens, but these eight hens only weighed from 7½ lbs. to 8 lbs. each, and his average experience taught him that hens of that weight usually surpassed any others in the production of eggs. In the year 1868, however, he affirms that all American fanciers and judges "ran riot" for large birds, and hens of 10 lbs. to 12 lbs. weight had to be bred. The consequence was, a not-excessive but steady and perceptible diminution of laying, and he now finds it impossible to guarantee more than 150 eggs per annum from his strain of birds. In England, where competition has been keener, I doubt if even this average could be obtained by many of our fanciers.

Mr. Felch does not, however, consider that size cannot be obtained without sacrificing eggs. In 1870 he sold a hen which turned out an exceptionally good layer, though she attained the weight of over 12 lbs., and like the case mentioned by me of a Dark Brahma, the quality descended to her progeny. But Mr. Felch notes the fact that this bird as a pullet did not exceed 8 lbs., and laid early, making her weight later; and the conclusion he draws is, that if it be desired to combine great size with prolific laying, the size must not be sought by undue forcing or by breeding from the largest birds only, but by selecting those of the best layers which also under ordinary regimen have attained the largest size.

I do not wish or expect by these remarks to induce fanciers to cultivate the production of eggs. Anyone who "shows"

has such a direct interest in winning if he can, that he will seek what bears upon that before any other objects. Such pursuits are by no means the useless hobbies many suppose, for the "practical" breeders bred very few fowls worth speaking of till "fanciers" came to the rescue. What I wish is to show how the conclusions I before pointed out are corroborated by independent testimony, and thus again to draw attention to the important fact that those who do breed poultry simply for eggs may, just as the fancier does, increase the point they desire in the same way as the fancier does his—by selecting for sitting, eggs from the hens which show laying qualities in the greatest degree. No recondite knowledge whatever is required, it is simply to sit only the eggs from hens which laid the earliest and have continued to lay the best. Cockerels also should only be preserved which are bred from the best laying hens, and in this way in a very few years the production may be increased enormously.

I may add, that I am more and more convinced of the great laying qualities of Leghorns, which, considering their hardness and the fair size of their eggs, I think the best laying breed yet known. When I have tested them a little further I hope to say a little concerning a variety of this breed not at present known in this country.—L. WRIGHT.

HALIFAX AND CALDER VALE POULTRY SHOW.

ALTHOUGH in its old days no society enjoyed greater confidence on the part of exhibitors, there have been no poultry nor Pigeons shown at the annual gatherings for several years past. The schedule for the Show of August 31st did not offer the same attractions as those of some of the neighbouring societies, and yet the entries were good. The pens were as of old, and they were the only things to which exception could be taken. We would strongly advise that pens of modern construction should be adopted for the future.

Spanish headed the list, both old and young birds being of fair quality, and in good plumage for the time of year. *Dorlings* were also pretty good in both classes, and in the adult *Cochins* Partridge were first and Buffs second. In chickens the first prize went to Buffs, which took the cup for the best pen in the Show. The adult *Brahmas* were sadly out of feather, and the chicken class only of moderate quality. Adult *Game* were poor, but the first-prize Brown Red chickens were very good. In *Polands* the quality was exceedingly high, but the birds were fast failing in feather, though the young birds compensated in this respect, and two fine pens of Silvers were first and second; the two highly commended pens of White-crested Blacks were also of good quality, but young. The entries in the *Hamburgh* classes were not large, and, although there were some good chickens, many of the prizes were carried off by the bloom and freshness of the birds. The old birds were both good and in marvellous feather for the time of year. In *Game Bantams* we did not consider the birds of the highest merit, but the two winning pens of Blacks in the next class were very good. *Aylesbury Ducks* were a splendid lot; and the winning *Geese*, which were Grey, were a sight to be remembered.

In *Pigeons* the Yorkshire champions were overthrown by the presence of that awe-inspiring Scotchman who carried away the lion's share of honours to grace the loft in Brockley Road; yet even they must have been well satisfied by the sight of so many first-rate specimens as were brought together. In Pouter cocks a most beautiful Yellow stood first, which for symmetry and style will not be easily beaten, and an immense Blue, but wanting in style, was second. In hens a grand Blue was first, and White second, the latter being capital in girth, but not in the best show. Carrier cocks came next, the first-prize bird being a grand fellow, and the embodiment of all that can be required in this variety; the second a much younger bird with a very large eye wattle, but not so well developed in beak wattle. The whole class was commended. Carrier hens were not so good as the cocks, but the winners were fine specimens. The first-prize bird was exceedingly good in all points; the second-prize bird large, and large in head, but a little over-trimmed round the eye. In Almond Tumblers the competition was very close, but the first-prize pair were perfect in all points, and a capital match, the colour of the hen being quite equal to that of the cock. For Any other variety of Tumblers a pair of Red Splashes were first, and Red Mottles second. Dragoons were a fair lot, the winners very good, but many of the birds out of feather. Trumpeters produced the most extraordinary pair of Black Mottles that has ever been seen. These were very large, the hood being well defined, and the rose of great size. The cup for the best pen in the Show was awarded to them. Owls were numerous and good, and the race very close; the first went to Whites, and the second to Blues. Turbits were a faulty lot of birds, and Jacobins of fair quality, Reds being first, and Yellows second. As the pens were small Fantails did not show to advantage, and several of the best birds were a little soiled. Barbs were of great merit, but some of the best entirely worn out; Blacks were first, and Reds second. In Magpies Reds were

first and Yellows second. In Antwerps there were but three entries, a most extraordinary occurrence for this locality, and Duns of high merit won both prizes. In the Selling class a capital pair of Black Swallows were first, and Black Jacobins second, with Yellow Magpies highly commended.

SPANISH.—1, H. Beldon, Goitstock, Bingley. 2, H. Wilkinson, Earby, Skipton. *hc*, J. Powell, Bradford. *Chickens*.—1, C. W. Brierley, Middleton. 2, H. Wilkinson, *hc*, J. Powell.

DORKINGS.—1, E. Leech, Rochdale. 2, W. H. King, Rochdale. *hc*, E. Smith, Farnham, Rochdale. *Chickens*.—1, E. Leech. 2, W. Harvey, Sheffield. *hc*, W. H. King.

COCHIN-CHINAS.—1, C. W. Brierley. 2, W. Harvey. *Chickens*.—1, Cup, and 2, C. Sidgwick, Keighley.

BRAMA POOTRA.—1, W. Whiteley, Sheffield. 2, W. Harvey. *Chickens*.—1, C. Carr, Wilden, Bingley. 2, J. Smith, Gilstead, Bingley. *hc*, W. Whiteley.

GAME.—1, C. W. Brierley. 2, R. Hemingway, Saelk, Halifax. *Chickens*.—1, F. E. Wright, Huddersfield. 2, T. Bottomley, Shelf.

POLANDS.—1 and 2, H. Beldon. *Chickens*.—1 and 2, H. Beldon.

HAMBURGS.—Golden pencilled.—1 and 2, H. Beldon. *hc*, S. Smith, North-

owram. *Chickens*.—1, H. & A. Gill, Crawshawbooth, Rawtenstall. 2, H. Beldon.

HAMBURGS.—Silver-pencilled.—1, H. & A. Gill. 2, H. Beldon. *Chickens*.—1, J. Bowness, Newchurch. 2, H. Beldon.

HAMBURGS.—Golden-spangled.—1 and 2, H. Beldon. *Chickens*.—1, R. H. Ashton, Mottram. 2, H. Beldon.

HAMBURGS.—Silver-spangled.—1 and 2, H. Beldon. *Chickens*.—2, H. Beldon.

hc, W. Bairstow, Brighouse.

HAMBURGS.—Black, White, or Any other variety.—1, J. Smith. 2, H. Beldon.

hc, W. Harvey. *Chickens*.—1 and 2, C. Sidgwick.

ANY OTHER VARIETY EXCEPT BANTAMS.—1, W. Harvey. *Chickens*.—1, J. J. Malden, Biggleswade (Crève-Cœur). 2, E. Walton, Rawtenstall.

CRAVE BANTAMS.—1, J. A. Brooks, Hunslet. 2 and *hc*, F. Steel, Halifax.

BANTAMS.—Black.—1 and 2, W. Walker, Halifax. *hc*, H. Beldon. Any other

Variety.—1, R. Pickles, Edenfield, Bury. 2, E. Walton, Rawtenstall. *hc*, T. Cropper, Baucup.

DUCKS.—Aylesbury.—1 and 2, E. Leech. *Rouen*.—1, F. E. Rawson, Thorpe.

Any other Variety.—1 and 2, W. Binns, Pudsey. *hc*, J. Sykes, Boothtown; J. J. Malden.

GEESSE.—1, J. White, Netherton, Wakefield. 2, E. Leech. *hc*, H. Crossley,

Halifax; F. E. Rawson, Thorpe; S. Fewthrop, Boothtown.

TURKEYS.—1, H. Crossley. 2, F. E. Rawson. *hc*, E. Leech.

SELLING CLASS.—1, J. Powell (Black Spanish). 2, F. E. Rawson (Rouen

Ducks). *hc*, C. Carr (Brahma Pootra).

EXTRA STOCK.—2, T. C. & H. Lord, Huddersfield (Rabbits).

PIGEONS.

POUTER OR CROPPER.—Cock.—1, R. Fulton, London. 2, E. Horner, Hare-

wood, Leeds. *hc*, G. J. Taylor, Huddersfield (2). *Hen*.—1 and 2, R. Fulton.

hc, E. Horner (2); G. J. Taylor; R. Fulton; W. Harvey.

CARRIER.—Cock.—1, G. J. Taylor. 2, R. Fulton. *hc*, H. Yardley, Birming-

ham; E. Horner; G. J. Taylor; R. Fulton (2). *Hen*.—1, R. Fulton. 2, G. J.

Taylor. *hc*, G. J. Taylor; R. Fulton. *c*, E. Horner.

TUMBLERS.—Almond.—1 and 2, R. Fulton. *hc*, E. Horner; R. Fulton. Any

variety.—1, R. Fulton. 2, G. J. Taylor. *hc*, G. J. Taylor; R. Fulton.

DRAGOONS.—1, E. Horner. 2, J. E. Mason, Bradford. *hc*, A. Smith, North-

owram; R. Fulton.

TRUMPETERS.—1, Cup, and 2, R. Fulton. *hc*, G. J. Taylor.

OWLS.—1, J. Fielding, jun., Rochdale. 2, R. Fulton. *hc*, C. Dennison,

Halifax. *hc*, G. J. Taylor (2); W. Harvey.

TURBOTS.—1, R. Fulton. 2, T. Foster, Bingley. *hc*, R. Fulton; J. Taylor,

Ovenden.

JACOBINS.—1, Hinchliffe & Holt, Bradford. 2, R. Fulton. *hc*, G. J. Taylor; R.

Fulton.

FANTAILS.—1, R. Fulton. 2, J. F. Loversidge, Newark. *hc*, H. Yardley.

BARBS.—1 and 2, R. Fulton. *hc*, R. Wade, Halifax; J. Fielding, jun.; H.

Yardley. *hc*, R. Fulton.

MAGPIES.—1 and 2, E. Horner.

ANTWERPS.—1, J. W. Collinson, Halifax. 2, E. Horner. *hc*, W. Harvey.

ANY OTHER BREED.—1, E. Horner. 2, H. Yardley.

SELLING CLASS.—1, W. Harvey. 2, G. J. Taylor. *hc*, E. Horner.

JUDGES.—*Poultry*: Mr. R. Teebay, Fulwood, Preston.

Pigeons: Mr. E. Hutton, Pudsey.

KEIGHLEY POULTRY SHOW.

The following awards were made at this Show, held August 23rd and 24th.

COCHIN CHINAS.—Buff.—1 and 3, W. A. Taylor, Manchester. 2, T. F. Ansell, St. Helens. *Chickens*.—Cup, 1, and 3, W. A. Taylor. 2, C. Sidgwick, Keighley.

COCHIN-CHINA.—Any other colour.—1, C. W. Brierley, Middleton. 2, W. A.

Taylor. *Chickens*.—1 and 2, W. A. Taylor. 3, C. Sidgwick.

SPANISH.—Black.—1, H. Beldon, Goitstock, Bingley. 2, H. Wilkinson, Earby.

Skipton. 3, J. Powell, Bradford. *Chickens*.—1, H. Wilkinson. 2, C. W.

Brierley. 3, J. Powell.

HAMBURGS.—Silver-pencilled.—1, H. Beldon. 2, H. Pickles, Earby. 3, H. & A.

Gill, Crawshawbooth, Rawtenstall. *Chickens*.—1, H. Beldon. 2, H. Smith,

Morton Banks, Keighley. 3, H. Pickles.

HAMBURGS.—Gold-spangled.—1 and 2, H. Beldon. 3, H. Pickles. *Chickens*.

—1, H. Beldon. 2, L. Smith, Kildwick Woodside. 3, I. Smith, Kildwick Wood-

side.

HAMBURGS.—Gold-pencilled.—1, T. Dean, Keighley. 2, J. Rollinson, Lindley,

Otley. 3, H. Beldon. *Chickens*.—1, T. Dean. 2, H. Beldon. 3, R. H. Ashton,

Mottram.

HAMBURGS.—Gold-pencilled.—1 and 2, H. Beldon. 3, H. Pickles. *hc*, T.

Fawcett, Baildon. *Chickens*.—1, H. Beldon. 2, H. & A. Gill. 3, W. Clayton,

Keighley. *hc*, H. Pickles.

HAMBURGS.—Black.—1 and 3, J. Smith, Gilstead, Bingley. 2, H. Beldon.

hc, J. Moore, Low Lane, Bingley. *Chickens*.—1, C. Sidgwick. 2, W. A. Taylor.

3, J. Moore. *hc*, J. Greenwood, Keighley; J. Smith.

POLISH.—1 and 2, H. Beldon. 3, T. Dean. *Chickens*.—1, T. Dean. 2, J.

Barker. 3, H. Beldon. *hc*, T. Dean; J. Bowker.

DORKINGS.—1, E. Leech, Rochdale. *Chickens*.—1, E. Leech. 2, T. E. Kell,

Wetherby. 3, J. Berry, Silsden.

GAME.—Red.—Cup and 1, C. W. Brierley. 2, J. Fortune, Morton Banks.

3, J. Boothman, Rimmington. *Chickens*.—1, E. Lund, Silsden. 2 and 3, W.

Tillotson, Coates, Barnoldswick.

GAME.—Any other variety.—1, C. W. Brierley. *Chickens*.—1, Miss Aykroyd,

Eccleshill. 2, G. G. Wilding, Montford. 3, Miss Mason, Worcester.

ANY OTHER VARIETY.—1 and 2, H. Lacy, Hebden Bridge. 3, Furness and

Sudall, Rawtenstall. *Chickens*.—1, T. F. Ansell. 2, W. A. Taylor. 3, J. J.

Malden, Biggleswade. *hc*, Furness & Sudall.

BANTAMS.—Game.—1 and 3, G. Hall, Kendal. 2, W. F. Entwistle, Westfield,

Bradford. *hc*, W. F. Entwistle; W. & F. Steel, Stump Cross, Halifax. *Chickens*.

—1 and 2, W. F. Entwistle. 3, G. Hall. *hc*, G. Hall; S. Stephenson, jun., Ebby,

Stroud; Furness & Sudall.

BANTAMS.—Black.—*Chickens*.—1, Miss Robinson, Long Lee, Keighley. 2,

R. H. Ashton. 3 and *hc*, W. Moore.

BANTAMS.—Any other variety.—1, E. Walton, Horncliffe. 2, H. Beldon. 3,

R. H. Ashton. *Chickens*.—1, R. Pickles, Eden Field, Bury. 2, H. Beldon. 3,

R. H. Ashton.

DUCKS.—*Rouen*.—1, C. Newton. 2, J. Newton. 3, W. Clayton. *Aylesbury*.—

1 and 2, E. Leech. 3, J. Hinde, Darwin. Any other variety.—1, W. Harrison.

2, J. J. Malden.

GEESSE.—1 and 2, E. Leech. 3, T. M. Derry, Gedney, Wisbeach.

SELLING CLASS.—Cock.—1, J. J. Booth. 2, E. Leech. 3, Furness & Sudall.

Hens.—1, J. J. Booth. 2, C. Carr, Wilden. 3, J. Berry. *hc*, Furness & Sudall.

PIGEONS.

BEST PEN.—Cup, E. Horner, Harewood.

POUTER OR CROPPER.—Cock.—1 and 2, E. Horner. 3, J. Hawley, Bradford.

Hen.—1 and 2, E. Horner. 3, J. Hawley.

CARRIERS.—Cock.—1 and 2, E. Horner. 3, J. Hawley. *hc*, H. Yardley, Birming-

ham. *Hen*.—1 and 2, E. Horner. 3, J. Hawley.

TUMBLERS.—Almond.—1, E. Horner. 2, J. Hawley. 3, H. Yardley. *Mottled*.

—1, E. Horner. 3, J. Hawley.

BALDS OR BEARDS.—1, J. T. Lishman, Gillingham.

OWLS.—1, C. Dennison, Halifax. 2, E. Horner. 3, J. Hawley.

TURBOTS.—1, E. Horner. 2, J. Hawley. 3, T. Foster, Denholme Gate.

JACOBINS.—1, Hinchliffe & Holt, Bradford. 2 and 3, E. Horner. *hc*, J.

Hawley. *c*, J. Thompson, Fern Hill, Bingley.

FANTAILS.—1 and 3, E. Horner. 2, H. Yardley.

BARBS.—1 and 3, E. Horner. 2, H. Yardley. *hc*, J. Hawley; J. Lister

Keighley. *c*, F. Dean, Keighley.

DRAGOONS.—1, E. Horner. 2, H. Yardley. 3, J. Lister.

TRUMPETERS.—1, E. Horner. 2, J. Hawley.

MAGPIES.—1, J. T. Lishman. 2, J. Thompson. 3, E. Horner.

ARCHANGELS.—1 and 2, H. Yardley. 3 and *hc*, E. Horner.

ANTWERPS.—1, H. Yardley. 2, C. F. Copeman, Birmingham. 3, E. Horner.

hc, J. Lister. *c*, J. Hawley.

ANY OTHER BREED.—1, J. Hawley. 2, H. Yardley. 3, J. Thompson. *hc*, E.

Horner.

SELLING CLASS.—1 and 3, J. Thompson. 2, E. Horner.

RABBITS.—*Long-eared.*—Buck.—1, W. H. Webb, jun., Coseley, Bilston. 2, J.

Hawley. *Doe*.—1, T. H. Webb, Keighley.

ANY OTHER VARIETY.—Buck.—1 and *hc*, J. Boyle, jun., Blackburn. 2, S. G.

Driver, Morton Banks, Keighley. *c*, J. Bland, Worth Village Keighley. *Doe*.—

1, S. G. Driver. 2, J. Boyle, jun.

JUDGES.—*Poultry*: Mr. R. Teebay, Fulwood, Fulwood, Preston.

Pigeons: Mr. F. Esquilant, Brixton, London.

FARNWORTH POULTRY SHOW.

The majority of the entries for this Show were chickens of the present year, and an unusually excellent lot they proved to be. The Game were the best seen this summer, and, considering that many of the earliest cockerels were only just recovering from dubbing, the high condition in which they were shown was most praiseworthy. The competition in all these classes was very close, and rarely have we seen classes throughout so unexceptionably good both as to character and plumage. There was, however, one unfavourable feature that it is necessary to allude to—viz., that a few excellent pens were thrown altogether out of the chance of winning by being what is known as “duck-footed.” A very ill-conditioned class of adult Dorkings was counterbalanced by a really good entry of young ones. The highest possible quality existed in every variety of *Hamburghs*, and the Judges were engaged a considerable time in determining which pen of these breeds was the most deserving for the special *Hamburgh* prize, all five varieties being represented by capitally-shown specimens. Among the *Golden Polands* was one of the best pullets we have seen for many years. Some of the pens of *Brahmas* were exceedingly fine, but excessive feeding was telling unfavourably on the condition of a pen or two among them. The giving of too much flesh meat to poultry generally oversteps the owner's first intentions, and should be resorted to only with especial caution. The *Cochin* chickens were a first-rate collection, and almost all of them were in excellent show condition. The Game *Bantams* were not only very forward, but also first-class birds, Black Reds and really good coloured *Duckwings* being the winners. *Rouen Ducks* formed a very large class of superior birds, and it was generally remarked that so many truly-feathered pens are but seldom seen together. The Fancy *Waterfowl* class was one of the most deserving in the Show. The Judges, from the instructions received, awarded all the cups offered as extra premiums, but by the provisions in the prize schedule they were to be withheld unless the entries amounted to certain specified numbers in aggregate classes. The policy of this unusual restriction we think open to question, where birds of undoubtedly the highest merit compete successfully against all comers. It is therefore possible the Committee may before another season reconsider this regulation, and not render it imperative that the prizes shall literally depend on the number of entries rather than the perfection of the prizewinners themselves. A large addition to the Society's funds no doubt resulted from the weather being exceedingly fine, consequently the attendance was most satisfactory. For several years past, we are informed, wet days have always marked the Farnworth meetings.

GAME.—1, C. W. Brierley, Middleton. 2, J. Fletcher, Stoneclough. *c*, T. Dyson, Halifax. *Chickens*.—1, W. F. Addie, Preston. 2, J. Smith, Southwell. *hc*, J. W. Morris, Rochdale; T. Sharples, Rawtenstall. *c*, S. Stephens, jun.

EBLEY.—Cock.—1, J. Fletcher. 2, C. W. Brierley.

GAME (Chickens).—Black-breasted Red.—1, J. Fletcher. 2, T. P. Lyon, Liver-

pool. *Brown-breasted Red*.—1 and Cup, T. P. Lyon. 2, J. Fletcher. *hc*, T.

Burgess, Burleydam. T. Dyson, Halifax. Any other Variety.—1, J. Fletcher

(*Duckwings*). 2, T. P. Lyon (*Duckwings*). *hc*, Barker & Charnock, Bingleworth

(*Duckwings*).

DORKINGS.—1, E. Leech, Rochdale. 2, N. Russell, Brynrgwyn. *Chickens*.—1

and Cap, T. E. Kell, Wetherby. 2, H. Pickles, Earby. *hc*, N. Russell.

SPANISH.—1, Cup, and 2, J. Leeming, Preston. *Chickens*.—1, C. W. Brierley.

2, W. Moore, Wolverhampton.

COCHINS.—1, T. Stretch, Ormskirk. 2, T. F. Ansell, St. Helens. *Cinnamon*

or Buff.—*Chickens*.—1 and Cup, C. Sidgwick, Keighley. 2 and *hc*, W. A. Taylor, Manchester. *Partridge-feather*, or *Any other variety*.—1 and 2, W. A. Taylor, *hc*, C. Sidgwick, Keighley.

HAMBURGS.—*Golden-pencilled* or *Silver-pencilled*.—1, H. Pickles, Earby. 2, No competition. *Golden-pencilled*.—*Chickens*.—1, T. Wrigley, jun., Middleton. 2, W. Speakman, Nantwich. *hc*, Duke of Sutherland, Trentham Hall. *Silver-pencilled*.—*Chickens*.—1 and Cup, Duke of Sutherland. 2, No competition.

HAMBURGS.—*Golden-spangled* or *Silver-spangled*.—1, H. Pickles. 2, No competition. *Golden-spangled*.—*Chickens*.—1, N. Marlor, Denton. 2, Duke of Sutherland. *hc*, T. Walker, jun., Denton. *Silver-spangled*.—*Chickens*.—1 and 2, J. Fielding, Newchurch. *c*, J. Messer, Reading.

POLANDS.—1, J. Fearnley, Lowton. 2, P. Unsworth, Lowton.

BRAHMA POOTRA.—1, T. F. Ansell. 2, Rev. N. J. Ridley, Newbury. *Chickens*.—1 and Cup, T. F. Ansell. 2, W. A. Taylor, Manchester. *hc*, W. B. Etches, Whitechurch. 1, Mill, Liverpool; J. Holmes, Chesterfield.

BANTAMS.—*Game*.—*Cock*.—1 and Cup, T. Sharples. 2, W. Barton, Haslingden. *hc*, W. F. Addie. *Any variety except Game*.—1, M. Leno, Biggleswade. 2, R. H. Ashton, Mottram.

ANY OTHER VARIETY.—1, W. A. Taylor. 2, Duke of Sutherland (Black Hamburgs).

SELLING CLASS.—1, P. Unsworth. 2, J. Fearnley, Lowton (Polands).

DUCKS.—*Rouen*.—1 and Cup, W. Evans, Whiston. 2, R. Gladstone, jun., Court Hey. *hc*, T. Wakefield, Golbourne (2); R. Gladstone, jun.; C. P. Ackers, H. E. Smith, Preston. *c*, C. A. Barnes, Rickmansworth; R. Halsall, Halewood; P. Unsworth. *hc*, E. Leech, Rochdale. 2, Wittheld. *Any other Variety*.—1 and *hc*, H. B. Smith, Preston (Fancy). 2, C. W. Brierley. *c*, R. Gladstone, jun. (Carolinias).

GESE.—1, E. Leech, Rochdale. 2, W. Longton, Ditton.

TURKEYS.—1, E. Leech. 2, No competition.

The prizes were awarded by Messrs. Hewitt, Teebay, and Fell.

AIREDALE POULTRY SHOW.

This was held at Bingley on the 28th ult.

GAME.—*Cockerel*.—Cup, E. Lund, Silsden. 2, T. Dyson, Halifax. 3, Miss Aykroyd, Eccleshill. *hc*, T. Dyson; J. Hodson, Bradford. *Pullet*.—1, J. Hodgson. 2, M. Jowett, Clayton. 3, Miss Aykroyd. *hc*, T. Briggs, Bingley; J. Bird, Bingley.

SPANISH.—Cup, H. Wilkinson, Earby, Skipton. 2, J. Walker, Standeford, Wolverhampton. 3, W. & F. Pickard, Leeds. *hc*, E. Brown, Sheffield.

DORKINGS.—1 and 2, F. S. Arkwright, Sutton Scarsdale. 3 and *hc*, W. Harvey, Sheffield.

COCHINS.—Cup and 2, W. A. Taylor, Manchester. 3, C. Sidgwick, Keighley. *hc*, C. Sidgwick, Keighley.

BRAHMAS.—1, W. A. Taylor. 2, F. S. Arkwright. 3, Hon. Mrs. A. B. Hamilton, Bridgmont. *hc*, F. S. Arkwright; Dr. Holmes, Chesterfield; W. Whiteley, Sheffield; J. Smith, Bingley.

HAMBURGS.—*Golden-spangled*.—Cup, T. May, Wolverhampton. 2, R. H. Ashton, Mottram, Manchester. 3, T. Dean, Keighley. *hc*, J. Newton, Silsden, Leeds. *Silver-spangled*.—1 and 2, H. Beldon, Goitstock, Bingley. 3, I. Smith, Woodside, Kildwick. *hc*, L. Smith, Woodside, Kildwick; G. Mitchell, Keighley; J. Smith.

HAMBURGS.—*Golden-pencilled*.—Cup, H. & A. Gill, Crawshawbooth, Rawtenstall. 2, W. Barker, Cottinley. 3, E. Clayton, Morton Banks, Keighley. *hc*, H. Beldon (2). *Silver-pencilled*.—1, H. Smith, Morton Banks, Keighley. 2, H. Beldon; 3, W. Harvey.

HAMBURGS.—*Black*.—1, C. Sidgwick. 2, W. A. Taylor. 3, J. Moore, Bingley. *hc*, J. Smith.

ANY OTHER VARIETY EXCEPT BANTAMS.—Cup and 3, H. Beldon (Polands). 2, J. J. Malden, Biggleswade (Crève-Cœur). *hc*, W. Dring, Faversham (Houdan); H. Beldon (Polands).

GAME BANTAMS.—Cup, W. F. Entwistle, Westfield, Bradford. 2, G. Noble, Dewsbury. 3, G. Hall, Kendal. *hc*, W. F. Entwistle; W. Adams, Ipswich; W. F. Addie, Preston; W. & F. Steel, Halifax.

BANTAMS.—*Any other Variety*.—1, Miss Robinson, Keighley. 2, H. Beldon. 3, R. H. Ashton. *hc*, J. Walker, Halifax.

SELLING CLASS.—*Cock* or *Cockerel*.—1, H. Beldon. 2, C. Sidgwick. 3, J. I. Booth, Silsden. *hc*, C. Carr, Wilsden; E. Leech, Rochdale. *Hen* or *Pullet*.—1, H. Wilkinson. 2, C. Carr. 3, J. Newton. *hc*, H. Beldon.

DUCKS.—*Aylesbury*.—1, E. Leech. 2, J. Shillito. 3, H. Beldon. *Rouen*.—1 and 2, J. Newton.

PIGEONS.

POUTER.—*Cock*.—1 and 2, R. Fulton. London. 3, J. Hawley, Gillingham. *hc*, W. Harvey; E. Horner, Harewood. *c*, J. Hawley. *Hen*.—1, J. Hawley. 2, F. S. Arkwright. 3, R. Fulton. *hc*, R. Fulton; E. Horner.

CARRIER.—*Cock*.—Cup and *hc*, R. Fulton. 2 and 3, G. J. Taylor, Huddersfield. *Hen*.—1 and 3, R. Fulton. 2, G. J. Taylor. *hc*, R. Fulton; G. J. Taylor; E. Horner.

TUMBLERS.—1, G. J. Taylor; 2, H. Adams, Beverley. 3, E. Fulton. *hc*, G. J. Taylor; R. Fulton; H. Adams. 2 and 3, R. Fulton. *hc*, E. Horner. 3, H. Adams.

BARBS.—1, 2 and *hc*, R. Fulton. 3, R. Wade, Halifax.

OWLS.—1 and 3, G. J. Taylor. 2, R. Fulton. *hc*, C. Dennison, Halifax; E. Horner.

JACOBS.—1 and 2, R. Fulton. 3, E. Horner. *hc*, J. Thompson, Bingley; T. Rule, Durham; W. Croft, Ripley; R. Fulton.

TRUMPETERS.—Cup and 2, R. Fulton. 3, J. Hawley. *hc*, T. Rule; H. Beldon.

FANTAILS.—1, T. Rule. 2, R. Fulton. 3, E. Horner. *hc*, J. T. Lishman, Gillingham, Bradford.

TURBITS.—1, R. Fulton. 2, G. J. Taylor. 3, W. Croft. *hc*, T. Foster, Bingley; J. T. Lishman.

DRAGONS.—1, R. Fulton. 2, F. Graham, South Birkenhead. 3, E. Horner. *hc*, H. Beldon; F. Graham.

ANTWERPS.—1, H. Yardley. 2, E. Horner. 3, W. Harvey. *hc*, E. Horner. *c*, F. S. Arkwright.

ANY OTHER VARIETY.—1, H. Beldon. 2, H. Yardley. 3, J. Thompson. *hc*, W. Harvey.

SELLING CLASS.—1, J. E. Mason, Bradford. 2, J. Hawley. 3, J. Thompson. *Single Bird*.—1, W. Harvey. 2, A. Ashton, Middleton. 3, E. Horner. *hc*, C. G. Cave, Spalding.

LOCAL.

ANTWERPS.—*Homing*.—1, T. Cheeseman, Wilsden Hill. 2, B. Rawley, Goitstock. 3, S. Ruhton, Bingley. *hc*, C. Sidgwick.

RABBITS.

LOP-EARED.—1 and 3, T. C. & H. Lord, Huddersfield. 2, J. Hume, York. *hc*, A. H. Easton, Hull (2).

ANY OTHER VARIETY.—1 and 2, S. G. Hudson, Hull. 3, T. C. & H. Lord. *hc*, J. Boyle, jun., Blackburn; H. Dykes, Spalding.

SELLING CLASS.—1 and 3, T. C. & H. Lord. 2, H. Cawood, Thorne.

JUDGES.—*Poultry and Rabbits*: Mr. R. Teebay, Fulwood, Preston; *Pigeons*: Capt. H. Heaton, Worsley, Manchester.

EAST LONDON COLUMBIAN SOCIETY.—The members of this Society held their first meeting for this season on August 29th at the "Rising Sun," Bethnal Green. Considering that the Society has only been established five years, the show of birds,

all of this season's breeding, was remarkably good in number, quality, and variety. The Almond Tumblers exhibited by Messrs. Young, Gillet, and Doree were exquisitely beautiful. The Short-faced Baldheads and other Short-faced Tumblers exhibited by Messrs. Plaskett and Davis, were remarkably pretty. The Carriers shown by Messrs. Jettan, Shuter, Windell, Reeves, Hammock, and Gibson were also fine specimens. The Pouters and small Toy birds exhibited by Mr. Fulton were likewise all birds of the first order. This Society holds its meetings every alternate Thursday evening, from August 29th of the present year to March 27th, 1873. Visitors are admitted by members' cards, or by forwarding their card to the Chairman.

MARKET HARBOROUGH POULTRY SHOW.

This Show was an excellent one, and the arrangements perfect. The weather was exceedingly fine, and the show field was well filled with visitors.

Few *Dorkings* were exhibited, but they were good, and the same remark applies to the *Spanish* fowls. *Cochins*, White, Buff, and Partridge-feathered were admirable, many of the hens of all three of these varieties being such as would add considerably to the interest of any poultry exhibition. There were some good *Brahmas*, both Dark and Light-feathered competing, and these classes were evidently popular. Certainly so good a collection of Black Red *Game* fowls had never been on view at former meetings of this Society. *Bantams* were superior, but one pen of Silver-laced Sebrights, of great merit, exhibited by Mr. Leno, was thrown out of competition, as the rule required two hens instead of one. A few fine *Turkeys* and *Geese* deserve mention.

The *Pigeons* were a very good collection indeed, and several pens in the Selling class were claimed at exceedingly low prices. *Rabbits* proved much more numerous and good than was expected.

DORKINGS.—1, J. Watts, King's Heath, Birmingham. 2, M. M. Cashmore, Loughborough. *Cockerel*.—Prize, J. Watts.

SPANISH.—1, M. Brown, Ad Kettleby. 2, H. Yardley, Birmingham.

COCHINS.—*Cinnamon* and *Buff*.—1, H. Lloyd, jun., Handsworth. 2, H. Yardley. *c*, J. Hassall, Leicester. *Pullet*.—Prize, H. C. Woodcock, Leicester. *hc*, J. Hassall; J. Watts. *Cockerel*.—Prize, J. Watts.

COCHIN.—*White*.—1, R. S. S. Woodgate, Fenny, Tubridge Wells. 2, G. Barker, Leicester. *Pullet*.—Prize, R. S. S. Woodgate. *hc*, P. Passmore, Northampton. *c*, C. A. Barnes, Rickmansworth; G. Barker. *Cockerel*.—Prize, R. S. S. Woodgate. *hc*, L. Spooner, Oadby, Leicester; A. E. Deane, Aylesbury. *c*, P. Passmore.

COCHIN.—*Any other Variety*.—1, M. M. Cashmore. 2, No competition. *Pullet*.—Prize, M. M. Cashmore. *c*, T. Sheppard, Humberstone, Leicester. *Cockerel*.—Prize, M. M. Cashmore.

BRAHMAS.—1, H. Yardley. 2, J. T. Hincks, Humberstone, Leicester. *hc*, J. Watts. *Pullet*.—Prize, H. C. Woodcock. *hc*, R. Caborn, Biggleswade, Beds; J. T. Hincks; J. Watts. *Cockerel*.—Prize, J. Watts. *hc*, J. T. Hincks.

GAME.—1, W. H. Clare, Twycross, Atherstone. 2, W. E. Oakeley, Atherstone. *Pullet*.—Prize, W. E. Oakeley. *hc*, W. H. Clare. *c*, Lord Mauchline, Donington Park; W. H. Clare. *Cockerel*.—Prize, Lord Mauchline. *hc*, W. H. Clare. *c*, W. E. Oakeley. *Cock*.—Prize, W. E. Oakeley.

HAMBURGH.—*Golden-spangled*.—1, J. Wright, Melton Mowbray. 2, H. E. Emberlin, Oadby.

GAME BANTAMS.—1, Lord Mauchline. 2, M. Brown.

BANTAMS.—*Clean-legged*.—1, J. Watts.

SELLING CLASS.—*Cock*.—1, H. Yardley (Spanish). 2, L. Berkeley, Oundle (Grey Dorking). *hc*, H. Lloyd, jun. *Hen* or *Pullet*.—1, T. Sheppard (Partridge Cochins). 2, J. Wright (Silver-spangled Hamburg). *hc*, L. Berkeley; W. E. Oakeley; J. Watts. *c*, J. A. Hamel, Leicester.

DUCKS.—*Aylesbury*.—1, J. J. Sharp, Broughton, Kettering. 2, W. H. Johnson, Braunstone, Leicester. *Rouen*.—1, C. A. Barnes. 2, J. Wright. *hc*, J. Wright; Hon. P. Hastings, Donington Park.

TURKEYS.—1 and 2, W. H. Johnstone.

GESE.—1, M. Kew, Market Overton, Oakham. 2, J. Watts.

EXTRA STOCK.—*hc*, J. Parker (White and Coloured Muscovy Ducks).

PIGEONS.

CARRIERS.—1 and 3, H. Yardley. *c*, T. Chambers, jun., Northampton.

POUTERS.—1 and 2, H. Pratt, Birmingham. *hc* and *c*, H. Yardley.

FANTAILS.—1, J. F. Loversidge, Newark. 2, H. Yardley. *hc*, J. Bellamy, Liverpool; H. Yardley.

TURBITS.—1, H. Yardley. 2, J. Parker, Leicester.

MAGPIES.—1, H. Yardley. 2, J. Watts.

ANY OTHER VARIETY.—1, C. Taylor, Amphil, Beds. 2, T. Chambers, jun. *hc*, J. Bellamy (2); H. Yardley. *c*, J. Wheeler & Sons, Long Compton, Shipston-on-Stroud.

SELLING CLASS.—1, F. Sabbage, Northampton (White Owl). 2, H. Yardley (Black Barb). *hc*, J. Watts (Red Jacobins).

RABBITS.

LOP-EARED.—1, W. H. Webb, jun., Cosely, Bilston. 2, J. T. Hincks. *hc*, Hon. P. Hastings; F. Banks, London; W. Camner, Leicester. *c*, W. Camner.

ANY OTHER VARIETY.—1, E. S. Snuch, Boston, Lincolnshire. 2, W. G. Hancock, Northampton. *c*, J. E. Pilgrim, Hincley; W. Camner.

The Judge was Mr. Edward Hewitt, of Sparkbrook, near Birmingham.

RYHOPE POULTRY SHOW.

The third annual Exhibition of this well-regulated Society was held on August 29th. The pens were good; but as a cold north-east wind was blowing, they would have been better if they had had close instead of open backs. For all purposes we much prefer pens with close backs.

Dorkings were very good, being large, good in colour, and sound-footed. Adult *Cochins* were fine, and an excellent pair of Lemon Buffs won the cup against all the large varieties. The chickens were rather young for the show pen. *Spanish* were poor; but the one pen of Silver *Polands* was very fine, and the first-prize pen of *Brahmas* a handsome pair. In single *Game* cocks the first was a capital Black Red, though not in the best

plumage; but in the other Game classes there was nothing to deserve special notice. *Hamburgs* were few for the number of classes, though some of the birds were of fair quality. In this locality the competition in *Bantams* is generally keen, and in this case the entries were comparatively large in all classes. In adult Red Game a pair newly moulted, in faultless plumage, and good in all points, won the cup offered in the six classes; and the second-prize birds were also of fair quality. In Red Game Bantam chickens the same exhibitor carried off both honours with good birds, but undubbed. In old birds of any other variety of Game Bantams a remarkably good pair of Duckwings were first, but the others were not of high merit. In the class for Any other variety, Blacks were first and White second. *Aylesbury Ducks* were good and the whole class commended, and the winning Rouens were also good in all points. For Ducks of any other variety four prizes were awarded, the first to Kasarkas, the second to Widgeon, the third to White Calls, and the fourth to Bahamas. In the Selling class Black Hamburgs were first, and Dorking chickens second.

DORKINGS.—1, W. Swann, Bedfordton. 2, J. White, Walarby, Northallerton. *hc*, C. Widdas. *Bitchburn*, Darlington. W. Bearpark, Northallerton; W. J. Thompson, Morpeth. *Chickens*.—1, C. Widdas. 2, E. Barker, Stokesley. *hc*, W. Swan, Bedfordton.

COCHINS.—Cup, 1, and 2, G. H. Procter, Durham. *hc*, G. Holmes, Great Driffield. *Chickens*.—1, G. H. Procter. 2, W. Jaggs, Blyth. **BRAMMAS**.—1, Swann. 2, W. Whiteley, Sheffield. *Chickens*.—1, W. J. Thompson. 2, R. Henderson, Middleborough. *c*, J. N. Lawson, Ryhope.

SPANISH.—1, W. Jaggs. 2, W. J. Thompson. *Chickens*.—1, W. Laing, Sunderland. 2, J. N. Lawson.

POLISH.—1, W. Bearpark. *Chickens*.—1, W. Laing. 2, Dr. J. Barron. **GAME**.—Cup and 1, J. Mason. 2, J. Morton, Durham. *hc*, J. Brough, Carlisle. **GAME—Black-breasted and other Reds**.—1, J. Brough. 2, G. Watson, Ryhope. *c*, J. Gibson, Ryhope Colliery. *Chickens*.—1, C. Widdas. 2, J. Hardy, Bishopsworth. *hc*, J. Hardy, J. Morton; J. Stansfield.

GAME—Any other Variety.—1, G. Holmes. 2, Pickering & Dugdaley, Driffield. *Chickens*.—1, W. Laing. 2, C. Widdas.

HAMBURGS—Golden-spangled.—1, W. Bearpark. 2, G. Holmes. *Chickens*.—1, Countess of Tankerville, Chillingham Castle, Alnwick. 2, W. Whitfield, Hutton.

HAMBURGS—Silver-spangled.—1, W. Bearpark. 2, G. Holmes. *Chickens*.—1, Countess of Tankerville, Chillingham Castle, Alnwick. 2, W. Whitfield, Hutton.

HAMBURGS—Golden-pencilled.—1, W. Bearpark. 2, G. Holmes. *hc*, J. Pattison, Bebside Colliery; J. Morton. *Chickens*.—1, Countess of Tankerville. 2, D. Cheyne.

HAMBURGS—Silver-pencilled.—1, G. Holmes. 2, W. Bearpark. *hc*, N. H. Scott, Ford Hall, Sunderland. *Chickens*.—1, Countess of Tankerville. 2, N. H. Scott.

GAME BANTAMS—Black-breasted and other Reds.—Cup and 1, W. Rodgers, Sunderland. 2, G. Hall, Kendal. *hc*, D. Hunter, Sunderland; J. Ferry, Cowpen, Morpeth. *Chickens*.—1 and 2, W. Rodgers. *hc*, G. Hall; G. Holmes.

GAME BANTAMS—Any other Variety.—1, G. Hall. 2, J. Ross, Bebside Colliery, Blyth. *hc*, W. Rodgers. *Chickens*.—1 and *hc*, H. H. Thompson, Sunderland. 2, R. Youll, Boldon.

BANTAMS—Any other Variety except Game.—1, H. Mully. 2, W. J. Thompson. *hc*, H. H. Taylor, West Hartlepool. *Chickens*.—1, G. Holmes. 2, H. H. Thompson.

DUCKS—Aylesbury.—1, O. A. Young, Driffield. 2, T. Stansfield, Sunderland. *hc*, W. Laing (2); W. Swann; Miss F. Wilson, Morpeth. *Rouen*.—1, Miss F. Wilson. 2, W. Swann. *hc*, Mrs. Clark, Pittington; W. Swann. *Any other Variety*.—1 and 4, W. Binns. 2, J. G. Milner, Bellerby Vicarage, Leyburn. 3 and *hc*, O. A. Young.

DUCKS—Aylesbury.—1, W. Bearpark. 2, Mrs. Clark. *hc*, O. A. Young; J. Robinson; J. Morton; W. Swann; Miss F. Wilson; Countess of Tankerville.

JUDGE.—Mr. E. Hutton, Pudsey, Leeds.

WHITBY POULTRY SHOW.

THIS Show was held August 28th, in connection with that of the Agricultural Society. There were 303 entries of poultry and Pigeons. The following awards were made by the Judges, Messrs. Dixon, of Bradford, and Adams, of Beverley:—

DORKINGS.—1, J. White. 2, W. Bearpark. *Chickens*.—1, R. Smith. 2, J. White. *hc*, Miss Barclay. *c*, G. Garbutt.

SPANISH.—1, J. Thresh. 2 and *hc*, J. Powell. *Chickens*.—1, J. Powell. 2, J. Thresh. *hc*, G. Clemmitt.

FRENCH.—1, Miss Barclay. 2, J. Booth.

COCHIN-CHINA.—1, G. H. Procter. 2, G. Holmes. *hc*, W. Thompson. *Chickens*.—1, G. Speedy. 2 and *hc*, D. Beeson.

BRAMMA FOOTBALL.—1, W. Whitley. 2, T. S. Turner. *Chickens*.—1, M. G. Greenbury. 2, G. Polfreyman. *hc*, Rev. R. A. White.

GAME—Reds.—1, G. Sutton. 2, H. M. Julian. *Any variety*.—1, H. M. Julian. 2, G. Holmes. *Chickens*.—1, T. Weatherill. 2, J. Watson. *hc*, W. Maynard.

HAMBURGS—Gold-spangled.—1, H. Beldon. 2, G. Holmes. *hc*, G. Garbutt. *Silver-spangled.—1, H. Beldon. 2, G. Holmes. *Gold or Silver-spangled*.—1, G. Speedy. 2, Mrs. Stonehouse.*

HAMBURGS—Silver-spangled.—1, H. Beldon. 2, G. Holmes. *Silver-pencilled.—1, H. Beldon. *Gold or Silver-pencilled*.—1, T. H. Readman. 2, J. Russell. *hc*, W. Thompson.*

BANTAMS—Game.—1, W. Henderson. 2, J. Booth. *hc*, T. Percival. *Any variety*.—1, G. Holmes. 2, R. Smith.

ANY PURE BREED.—1, H. Beldon. 2, R. Ward. *hc*, Lady D. Yeoman. *Chickens*.—1, H. Beldon. 2, R. Loft. *hc*, J. P. Fawcett.

FARMYARD.—1, R. Smith. 2, G. A. Young. *hc*, T. S. Turner.

ANY VARIETY.—1, G. Scooby. 2, E. Barker. 3, J. Powell. *hc*, G. Pounder; O. A. Young. *c*, G. Trueman.

DUCKS—Aylesbury.—1, O. A. Young. 2, Mrs. Stonehouse. *Ducklings*.—1, Mrs. Stonehouse. 2, H. Storry. *Rouen*.—1, G. Garbutt. 2, G. Sadler. *Ducklings*.—1, J. Newton. 2, G. Garbutt. *hc*, T. Weatherill. *Any variety*.—1 and 2, S. Burn. *hc*, O. A. Young; G. Sadler. *Ducklings*.—2, O. A. Young. *Crossed*.—1, S. Burn. 2, G. Pounder. *hc*, T. S. Turner.

GESE.—1, H. Storry. 2, O. A. Young. *hc*, J. Arrowsmith. *Goslings*.—1, J. B. Braithwaite. 2, P. C. Bedington. *hc*, O. A. Young.

TURKEYS.—1 and *hc*, J. B. Braithwaite. 2, H. Storry. *Poulters*.—1, O. A. Young. 2, T. M. Derry.

PIGEONS—Pouters.—1, G. Sadler. 2, J. P. Fawcett. *Tumblers*.—1, G. Sadler. 2, C. Anton. *Carriers*.—1, G. Sadler. 2, J. Harland. *Fantails*.—1, J. P. Fawcett. 2, H. Yardley. *hc*, J. S. Lovelands. *Jacobins*.—1, R. G. Sanders. 2, R. Wilson. *Trumpeters*.—1 and 2, R. Wilson. *Barbs*.—1, J. P. Fawcett. 2, H. Yardley. *Any variety*.—1, J. Thresh. 2, T. Booth. *Selling Class*.—1 and 2, C. Anton. *hc*, J. Harland; J. Horsley; J. Harrison; C. Anton.

TRANSFERRING BEES—A BAR HIVE.

REPLYING to your correspondent, "A YOUNG APIARIAN," I would certainly recommend him after safely wintering his two straw hives to transfer their contents to bar-frame hives; and the hive I should recommend him to construct is the one spoken of by me as being preferred by Mr. C. N. Abbott, although he now recommends a larger one still, and promises a full description to be given in the *English Mechanic* in time for next season.

The hives I made for myself are 17 inches from front to rear, 11 inches deep, and 12½ inches wide, all inside measure. These admit eight frames, the top bars of which are 1 inch wide; they are of a depth to allow 1 inch between the bottom of the frames and the floor-board, and of a width to allow three-sixteenths of an inch between the ends and the hive. They are separated by half-inch spaces, which may either be done by screws or by a notched rabbet at the top of the front and rear of the hive. I have made them double-cased, with air-spaces between the inner and outer skin for better protection in winter. Before making any more hives for next season I intend waiting for Mr. Abbott's promised instructions, and should advise "A YOUNG APIARIAN" to do likewise.

For the process of transferring bees to bar-frame hives I cannot do better than refer your correspondent to an article by Mr. Abbott in the *English Mechanic* two weeks ago, where the *modus operandi* is described at full length, and I am sure if he follow the instructions there given he cannot fail in being successful.

The introduction of an Italian queen mentioned in my letter to your Journal (page 123) was accomplished in the following manner: Having captured and removed the black queen, I next day caged the Italian queen in a perforated zinc queen cage, and inserted it between the bars of the hive, taking care that she had sufficient honey for her wants and a few of her followers for company. I must, however, have bungled in the operation, for upon going to release her forty-eight hours afterwards I found she had made good her escape into the hive. Fortunately she was accepted by the bees as their future sovereign, and so this my first attempt was more successful than I could reasonably have expected under the circumstances. The operation is not unattended with difficulties, as I lost several queens during the summer in trying to establish them as heads of colonies.

To have a swarm of bees in a bar-frame hive is simple enough. Having first shaken them into a common straw skep, a box, or anything that is handiest, remove the honey board from the bar-frame hive, and with a sharp jerk throw out the bees on to top of the frames, and they will quickly find their way between the frames down into the body of the hive, then slide on the honey board, screw it down, and set the hive on to the stand it is in future to occupy.

I do not manufacture hives for sale, but if your correspondent would prefer it my man shall make him one for a pattern, same as those I have in use, and you can give him my address, as I shall be happy to assist a beginner, as I myself have been assisted. In conclusion I would strongly advise him to obtain Langstroth "On the Hive and Honey Bee," and he will need little other teaching.—R. SYMINGTON.

HONEY SEASON IN NORTH BUCKS.

THE season has been far better than last year. Last year it was the exception for a bee-keeper to obtain any produce. I had an old stock given me, very weak, and I bought a swarm, but at Michaelmas, though I did not take an ounce of honey, I had to give each about 12 lbs. of food to make them up to the required weight; but the syrup was not wasted. A neighbour of mine lost three stocks, all he had, through not feeding, while mine stood the winter well. I have obtained from each stock an artificial swarm, and transferred both stocks to bar-frame hives, so that I have now four good stocks, all with new comb, and tolerably heavy.

As to the yield of honey, I have obtained 19½ lbs. of fine honeycomb, and 10 lbs. of the best run honey. I may add that had not the queen of one of my swarms died, and the loss remained unsuspected for some time, I should have had several more pound of super honey, for the other artificial swarm gave me 16½ lbs. of splendid honeycomb. This is not reckoned a good county for honey, as there is so little bee pasture.—L. C.

BEE-KEEPING IN BUCKINGHAMSHIRE.

IT must be four or five years since you gave in your Journal a section and description of a hive called the American Adjuster, which I consider a first-rate hive for those who desire a large quantity of fine honey without destroying their bees. I made one exactly of the dimensions given, and put in the stock box a first swarm, which well filled it the first year; and every season since, excepting one, I have taken by far the greatest weight of very fine honey from this hive. This year, on July 28th, I lifted off the top as usual, and it weighed 48 lbs.

—a splendid box of honey, but for the first time I discovered brood comb. Of course, after this I expected to find the queen not far off, and after a little search I saw her walking very leisurely on a piece of comb; I caught her and carried her to the stock box, where it appeared her subjects had already missed her, judging from the commotion in and out of the hive, and with what evident delight they received her. This was a very strong colony, and has never swarmed, a circumstance which I attribute to the very easy method of giving the bees plenty of room without greatly disturbing them.

At some future time I will give you my experience in this locality of wood bar hives and frame hives, the old-fashioned straw hives, and the improved cottage hive.

Would it have been the best policy to have destroyed the queen, as I feel certain she must be five or six years old? There appeared to be plenty of brood comb in the stock box.—W. R. L.

[We think it sound policy to leave the bees as much as possible to arrange their own affairs, so long as they do well; therefore we think you did right in restoring the queen to the colony. It is possible, of course, she may die before spring, but we should have risked it under the circumstances. Pray give us your experience as early as you please—the more of it the better.—Eds.]

DRY ROT.

Do any of your readers know much of dry rot in timber? I always used to think the fungus caused the disease by feeding on the wood. On taking off a remarkably fine specimen of the fungus from some wood, I could not find any roots into the wood, but the roots of the fungus were in the sleeper walls below the wood, and the fungus ramified in every direction from it, and coated the whole of the wood with a moist thick growth as impermeable to air as wet parchment. The wood had decayed wherever the air was excluded. The decayed wood was to all appearance the same as wood which I have seen rotten from being painted before it was seasoned. May not the impervious covering be the cause of the rot, and not from the fungus feeding on the wood?—C. P. PEACH.

OUR LETTER BOX.

BRAHMA COCKEREL FOR EXHIBITION (J. G.).—Accidents are only to be much feared when they affect some part where it is possible the occurrence has removed a disqualification—as, in the sickle feathers of a Game cock, they might have been parti-coloured; or in the breast of a Grouse Cockerel, the comparatively naked spot might have been covered with coloured feathers; but as there is no disqualification about the toe the loss of part of it is immaterial. The weight is satisfactory. A pound per month is good growth for the first three months.

DARK BRAHMAS' COMBS (Sheerness).—The single combs are as admissible as pea combs. They were formerly far more numerous than they are now, but the latter are everywhere preferred. In breeds where any comb is allowed, the only imperative rule is that all shall be alike in a pen. A pen containing two sorts of combs is not an exhibition pen.

GREY DORKINGS' PLUMAGE (T. C. B.).—There are three classes of Dorkings at most large shows—Grey, Silver-Grey, and White. In the former any colour is allowed and is correct. Colour has nothing whatever to do with an ordinary Dorking. It is a table, not a feather bird. Weight, size, shape, and early maturity are the merits sought for. The Silver-Grey is a very attractive bird, having the light breast and white shafts you admire. The White is of course self-coloured. Such a bird as you describe would doubtless be handsome. If you intend to make such, we should advise the striped to the black hackle, as being more striking. The heaviest Dorkings are generally dark-feathered birds, and their plumage does not show dirt.

LIGHT BRAHMAS' FEATHERS TURNING YELLOW (H. F. T. D.).—The cock is not disqualified, but he labours under a serious disadvantage. It is nevertheless not uncommon for white cocks to acquire a yellow tinge. If the pullet has brown specks she is disqualified; if black ones, she is not.

POULTRY YARD (G. B. U.).—We hardly understand you when you speak of a poultry yard wanting a flooring. Do you mean a poultry house? If not, what is the flooring now? It will be easier to tell you what you may not have than what you may. You may not have brick, flagstone, wood, or asphalt. The three former always induce cramp, the latter causes bad feet. No flooring is good which keeps the feet always stretched out and does not allow the claws to penetrate. If you already have an earthen floor be satisfied with it; it may be swept, and is easily kept clean. It is the healthiest you can have.

HOUDANS' LEGS—ROUEN DRAKE'S MARKINGS (Tyro).—The legs of Houdans should be black-and-white speckled. The small red head you speak of is unimportant. The white ring round the neck of a Rouen drake is absolutely necessary. It does not show itself in very young ones, and in old ones it disappears in moulting.

KEEPING DUCKS WHERE THERE IS NO WATER.—“In answer to ‘E. B.’ I have kept a drake and two Ducks, half-bred Rouens, in my yard since October last. During all this time they have had no more water than was supplied in an ordinary milk pan—certainly not more than 4 inches deep. Both the Ducks have had broods this season, the one hatched thirteen ducklings, and the other eleven; each had but thirteen eggs. The water is frequently changed for cleanliness sake; and the ducklings, save one which played with a kitten and got worsted, have thus far lived until wanted in the kitchen.—ST. EDMUND.”

EXHIBITION PENS (E. B.).—They can be hired at about the price you name of Messrs. Turner, of Sheffield, and others. We have known less charged for a large show.

BEE GAUZE, &c. (Novice).—The allegations of “C. N. A.” did not appear in our columns, therefore we cannot insert your comments.

BEES NOT LEAVING SUPER (Inquirer).—Take off the super as before, and having inverted it in a pan, take a small hive and rest one edge on the farthest edge of the super, holding it tilted up a little with your left hand. Then with a small stick or gentle hand, drum on the sides of the super, and in all probability you will soon hear the bees begin to ascend, and then you can look under and watch them; do so until all or nearly all are up. You can knock out the bees in the front or on the top of the stock, leaving the communication aperture open. If the super is of glass, and the bees will not leave, we invert it on a table or board, and placing a small hive as before, drum on the table or board, and we seldom find any difficulty in getting all the bees to ascend in a few minutes; but we usually first try to induce them to leave by the more peaceful method. If you wish to take the stock as well as the super, you must drive the bees in the way recommended in your book.

PRESERVING VEGETABLE MARROWS AND GOURDS (R. C.).—The fruit should not be cut until it turns yellow; then cut it open, remove the seeds, and again cut up the halves into quarters. Remove the flesh, cutting it in rather thin slices, and boil it with the same weight of loaf sugar. This makes an excellent conserve. Another mode is to cut the fruit just before the rind becomes too hard for a knife point to enter without great pressure, slice up, remove the rind and seeds, and boil with an equal weight of loaf sugar.

METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	A.M.				IN THE DAY.						
	Barom. at Sea and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Tem- perature.		Radiation Temperature		Rain.	
		Dry.	Wet.			Max.	Min.	In sun.	On grass		
1-72. August S. M.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
We. 28	30.806	59.8	53.8	W.	59.4	73.2	43.4	115.0	48.2	—	
Th. 29	30.112	61.1	57.4	S.W.	59.8	73.5	52.2	118.7	51.6	—	
Fr. 30	29.853	62.3	53.8	S.	61.3	66.1	33.6	95.6	50.9	0.120	
Sat. 31	29.719	60.0	55.3	N.W.	59.8	63.3	48.6	122.3	47.2	—	
Sun. 1	29.947	58.2	55.9	N.W.	58.6	68.3	48.6	95.1	46.3	0.183	
Mo. 2	29.896	67.2	61.8	S.	59.8	76.8	57.8	122.6	56.8	—	
Tu. 3	29.676	67.8	63.0	S.E.	60.9	83.1	57.1	121.2	53.6	0.180	
Means	29.884	62.3	57.9		59.7	72.6	51.6	118.1	49.9	0.432	

REMARKS.

28th.—A very fine day throughout; a peculiar haze for a short time between 6 and 7 P.M.

29th.—Fair morning, though rather hazy; cloudy in the afternoon; very fine solar halo at 5 P.M.

30th.—Dull morning, and stormlike till noon; overcast in afternoon; and lightning at 11 P.M.

31st.—Fine morning; rain about noon; fine afterwards, but much colder than it was a few days since.

Sept. 1st.—Fair in morning; rain between 1 and 2 P.M. and occasionally during the day, which was dull, cold, and comfortless throughout.

2nd.—Fine all the early part, and much warmer; rather stormlike in the evening, and rain soon after 9 P.M.

3rd.—Dull, hazy, and very dark about 10 A.M., but fine by noon; a splendid day afterwards, very warm; thunderstorm at midnight.

Although the last of August and first of September were quite cool, the mean of the week has been raised nearly to the same point as last week by the unusual warmth of September 3rd.—G. J. SYMONS.

COVENT GARDEN MARKET.—SEPTEMBER 4.

Rough vegetables continue very plentiful. The supply of fruit is comparatively short, but it does not realise such a sale as was anticipated, prices ranging upon an average with former years. Pears comprise Beurré d'Amanlis, Williams' Bon Chrétien, Hessel, and commoner sorts. The Potato trade is heavy, large quantities of diseased tubers having to be returned.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	½ sieve	3 0 to 0 0	Mulberries.....	½ lb.	1 0 to 0 0
Apricots.....	doz.	0 0 0	Nectarines.....	doz.	8 0 0
Cherries.....	per lb.	0 0 0	Oranges.....	½ 10	8 0 14 0
Chinats.....	bushel	0 0 0	Peaches.....	doz.	4 6 12 0
Currants.....	½ sieve	0 0 0	Pears, kitchen.....	doz.	0 0 0
Black.....	do.	0 0 0	dessert.....	doz.	2 0 4 0
Figs.....	doz.	1 6 3 0	Pine Apples.....	½ lb.	8 0 6 0
Filberts.....	lb.	1 0 0 0	Plums.....	½ sieve	5 0 0 0
Cobs.....	lb.	1 0 0 0	Quinces.....	doz.	0 0 0 0
Gooseberries.....	quart	0 0 0	Raspberries.....	lb.	0 0 0 0
Grapes, hothouse.....	lb.	2 0 5 0	Strawberries.....	½ lb.	0 0 0 0
Lemons.....	½ 100	6 10	Walnuts.....	bushel 10	25 0
Melons.....	each	2 0 5 0	ditto.....	½ 100	1 0 2 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	doz.	2 0 to 4 0	Mushrooms.....	pottle	1 0 to 3 0
Asparagus.....	½ 100	0 0 0	Mustard & Cress.....	punnet	0 2 0 0
Beans, Kidney.....	½ sieve	3 0 0 0	Onions.....	bunch	0 4 0 0
Broad.....	bushel	0 0 0	Pickling.....	quart	0 0 0 0
Beet Red.....	doz.	1 0 3 0	Parsley per doz. bunches		3 0 4 0
Broccoli.....	bundle	0 9 1 6	Parsnips.....	doz.	0 9 1 0
Cabbage.....	doz.	1 0 1 6	Peas.....	quart	1 0 1 6
Capiscums.....	½ 10	3 0 4 0	Potatoes.....	bushel	2 0 4 0
Carrots.....	bunch	0 6 0 0	Kidney.....	doz.	2 0 4 0
Cauliflower.....	doz.	2 0 4 0	Round.....	do.	2 0 4 0
Celery.....	bundle	1 6 0 0	Radishes.....	doz. bunches	0 6 1 0
Colsworts.....	doz. bunches	2 0 3 0	Rhubarb.....	bundle	0 0 0 0
Cucumbers.....	each	0 3 1 0	Salsafy.....	½ bundle	0 9 1 0
pickling.....	doz.	0 0 0 0	Savorys.....	doz.	0 0 0 0
Endive.....	doz.	2 0 0 0	Scorzoneria.....	½ bundle	0 9 1 6
Fennel.....	bunch	0 3 0 0	Sea-kale.....	basket	0 0 0 0
Garlic.....	lb.	0 6 0 0	Shallots.....	lb.	0 4 0 9
Herbs.....	bunch	0 3 0 0	Spinach.....	bushel	5 0 1 0
Horseradish.....	bunch	0 2 0 0	Somatatoes.....	doz.	1 0 0 0
Leeks.....	bunch	0 2 0 0	Turnips.....	bunch	0 3 0 6
Lettuce.....	doz.	0 9 1 0	Vegetable Marrows.....	doz.	0 6 1 0

WEEKLY CALENDAR.

Day of Month.	Day of Week.	SEPTEMBER 12—18, 1872.	Average Temperature near London.			Rain in 43 years.	Sun Rises		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock after Sun.	Day of Year.	
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.				
12	Th	Glasgow and Dublin Horticultural Shows.	69.1	44.8	57.0	16	31	af 5	21	af 6	21	4	41	af 11	9	3	58	256
13	F	Bury St. Edmunds Horticultural Show.	68.4	45.7	57.0	19	33	5	19	6	8	5	morn.		10	4	19	257
14	S		67.0	46.1	56.5	22	35	5	17	6	43	5	3	1	11	4	41	258
15	SUN	16 SUNDAY AFTER TRINITY.	67.5	45.9	56.7	16	36	5	14	6	9	6	32	2	12	5	2	259
16	M		68.4	46.8	57.6	16	38	5	12	6	29	6	0	4	13	5	23	260
17	Tu	Warwick Horticultural Show.	68.9	44.9	56.9	16	39	5	9	6	46	6	27	5	14	5	44	261
18	W	Royal Horticultural Society, Fruit, Floral, [and General Meeting.	68.2	46.5	57.4	19	40	5	7	6	3	7	53	6	15	6	6	262

From observations taken near London during forty-three years, the average day temperature of the week is 68.2°; and its night temperature 45.8°. The greatest heat was 88°, on the 13th, 1865; and the lowest cold 29°, on the 17th, 1840. The greatest fall of rain was 0.90 inch.

CULTURE OF ROSES IN POTS.



ANY of the correspondents of this Journal write about the Rose. It is a pleasant theme; and it is pleasant at the Rose shows to admire the long lines of superb trusses neatly set up in fresh green moss, when each eager admirer longs to produce such examples in his own garden.

The soil where my lot is cast is not at all adapted for Rose-culture. It is of a light, sandy nature, with a dry gravel sub-soil, so that the culture of the Rose out of doors is carried on under highly disadvantageous circumstances. We are thus driven to a system of culture under which we can meet our friends on more equal terms, and that is, culture in pots. This method gains in favour yearly, and it is well that it is so, for properly cultivated Rose bushes in pots are most beautiful objects, and are much more under the control of the cultivator than plants grown in the open border. What noble objects are the immense specimens, grown in large pots and covered with scores of superb flowers, exhibited at the metropolitan exhibitions! Such plants can only be obtained by a few persons of large means, and are far beyond the reach of ordinary growers. Excellent little specimens can be grown in 8-inch pots, and when furnished with from six to nine flowers of high quality and with deep green handsome foliage, nothing can equal them for decorative purposes in the greenhouse and conservatory in April and May.

To grow Roses well in pots they require liberal treatment, good soil, plenty of water at the roots, and to be kept free from mildew, red spider, green fly, and the worm in the bud. Orange fungus, which seems to pester "D., Deal," and the Rev. W. F. Radclyffe, has never appeared at this place. Mildew can be destroyed by dusting the affected parts with flowers of sulphur. If the plants are syringed once or twice a-day no red spider will appear. Green fly should be destroyed on its first appearance by fumigating the house with tobacco smoke. Badly-cultivated Rose trees in pots are an eyesore anywhere, and will never produce satisfactory blooms.

Pot Roses may either be worked on the Briar or Manetti stock, or grown on their own roots. Perhaps the largest proportion are worked on the Manetti; it is an excellent stock for nearly all the varieties, and it is specially adapted for early forcing.

The plants that are required for forcing should be in their blooming pots by the end of September or early in October. In potting, the old and exhausted soil should be partially removed from the roots with a pointed stick, and the plants repotted in the same-sized pot, or in one a size larger; this will depend upon the state of the roots and the health of the plants. Strong healthy plants which have well filled their pots with roots should have a larger pot. A suitable compost is turfy loam four parts, one part of decayed manure, a small proportion of quarter-inch bones, and a little sand if the loam is of a clayey nature. At the time of potting the plants will

be in leaf, and to prevent the foliage from dropping off syringe them two or three times a-day until fresh root-lets are formed. They will do out of doors as well as under glass at this time, except Tea Roses, which ought to be grown in a glass house; an airy span-roofed pit is a good place for them.

When the leaves change to a yellow hue and fall off, remove the plants to a place where they can be sheltered from heavy rains, but they must not become quite dry at the roots. The plants that are required for forcing very early should be pruned as soon as the leaves fall, and it is best to prune when the roots are comparatively dry, as otherwise the cut parts will bleed.

As soon as the buds start into growth remove the plants to a house into which air can be admitted freely, and place them close to the glass. The temperature must be regulated by the time the plants are required to be in flower; 45° at night will be high enough to start with, gradually raising the temperature to 55° or 60°. A high temperature is not desirable for the Rose, unless air can be admitted freely. When the young shoots have grown a few inches it is sometimes necessary to thin-out some of them to prevent crowding; this should not be neglected, for if the shoots crowd each other they will be drawn-up weakly, and the flowers will not be of good quality. When fairly started into growth and pushing vigorously, manure water should be applied to them. The best manure for this purpose is Mr. W. Paul's Rose manure, manufactured by the celebrated Rose-grower of Waltham Cross. It is easily applied; a small portion of it is spread over the surface of the pot, the virtues of the manure being washed in by repeated waterings. I tried a number of pot Roses with it this season, and the result on the growth and quality of the flowers was very remarkable. The manure seems to impart a richer colour to the flowers, and the foliage is of a deeper green. The flower-stalks will require to be neatly tied to sticks as they advance; this little attention, with careful watering and syringing once a-day, is all that the plants require to reward the cultivator with abundant trusses of gorgeous blooms.

It is unnecessary for me to give a list of Roses, as this has been done by some of your contributors who know far more about them than I do; but I may venture to name a few that I have found well adapted for pot-culture. Hybrid Perpetuals and Teas are the most desirable, but some of the Hybrid Chinas and Bourbons are excellent for pot-culture. Charles Lawson is one of the best; Coupe d'Hébé and Paul Ricaut are also good. Amongst the Teas it is not difficult to make a selection, good varieties for pot-culture are numerous—Adam, Belle Lyonnaise, Madame Falcot, Madame Margottin, Maréchal Niel (this splendid climbing variety should be worked on the Briar, and grown as a standard or half-standard; the blooms are drooping, and should be viewed from beneath), Madame Willermoz, Niphetos, President, and Souvenir d'un Ami. Of Hybrid Perpetuals there are many which I have no doubt may be named besides those which I shall enumerate, but the following may be depended upon

as proved sorts—viz., Anna Alexieff, Charles Lefebvre, Duke of Edinburgh, John Hopper, Jules Margottin, Madame Charles Wood, Madame la Baronne de Rothschild, Madame Victor Verdier, Marquise de Mortemart, Princess Christian, Victor Verdier, and William Griffith.—J. DOUGLAS.

STRAWBERRIES ON A HEAVY SOIL.

PERHAPS a list of the varieties of Strawberries grown here, with the dates of their blooming and ripening this year, may not be out of place in "our Journal." As so much has been asked of late about early and late sorts, I have placed them in the order that the first dish could be gathered off each variety.

From this list, after three years' trial, I have discarded The Lady, May Queen (?), and Elton Pine, and have added to it for next year, Lucas, Marguerite, Alexander II., and Admiral Dundas.

All those marked "extra" were first-rate. Eleanor is, I think, one of the best late Strawberries grown.

The soil here is a good strong loam on a clay subsoil. Elevation 567 feet above the sea level. Rainfall up to August 1st, 21.22 inches.

Varieties.	Date of Blooming.	Date of Ripening.	Remarks.
Black Prince.....	May 1st	June 19th	Good
Vicomtesse Héricart	" 1st	" 24th	Extra
de Thury.....	" 1st	" 26th	Good
Keens' Seedling.....	" 3rd	" 28th	Extra
President.....	" 1st	July 1st	Extra
The Amateur.....	" 1st	" 1st	Poor
May Queen (?).....	" 6th	" 1st	Good
Mr. Radclyffe.....	" 10th	" 1st	Extra
Sir J. Paxton.....	" 14th	" 1st	Good
British Queen.....	" 8th	" 4th	Extra
Jeyes' Wonderful.....	" 20th	" 5th	Extra
Bifton White Pine.....	" 11th	" 5th	Good
Oscar.....	" 8th	" 6th	Extra
Dr. Hogg.....	" 8th	" 6th	Poor
Elton Pine.....	" 20th	" 6th	Good
Empress Eugénie.....	" 22nd	" 12th	Good
Nimrod.....	" 25th	" 12th	Poor
The Lady.....	" 10th	" 15th	Good
Sir C. Napier.....	" 25th	" 20th	Extra
Eleanor.....			

—H. HARRIS, *Naseby Woolleys, Northamptonshire.*

THE ROCKERY.

It is not without considerable hesitation that I address myself to this subject, as I am fully aware that the views which I shall put forth will be at variance with those of many who consider themselves authorities on such matters; but as the columns of the Journal are as free to them as to me, if it be thought by anyone that I am in the wrong in condemning certain works on which a great amount of labour has been bestowed, and possibly a like amount of artistic skill, I am open to conviction, and will at once retract.

But to the matter in hand. Fortunately, it is not so momentous as the building of hothouses, nor the difficult problem of which is the best heating boiler; but it is one more difficult to define by practical rules than either of these, for it is only by those arbitrary maxims that govern what is commonly, but often erroneously, called "taste," that the merits or shortcomings can in the present case be judged. We all know of what a convenient material "taste" seems to be made, for, to take it to task for the commendation it has given to only one article of attire—let us say ladies' bonnets—during the reign of her present Majesty, it would certainly require a considerable stretch of the imagination to pronounce them all alike good, convenient, and tasteful. The same vagaries may be met with in other things, and I am not sure but the present mode of distorting plants of a peculiar growth, so as to make them assume one of a contrary description, thought to be a grand feat at horticultural shows, may not hereafter be exposed to as much ridicule as the young lady of the present day bestows on the bonnets of 1835 or thereabouts. There is, however, in the matter about to be entered upon this advantage, which absurdities in dress cannot lay claim to, and that is, "Nature steps in and amends what deformities we make in the case." This compensating influence is the all-important one; and as the mechanic with a lea remarks that a coat of paint often covers a multitude of sins, so Nature, in a like manner, obliterates faulty work, and that, too, in a more substantial manner than the painter.

A lady from the West of England writes for instructions about making an Alpine garden. Now, I apprehend many who assume to be garden artists would say there is a good opportunity for a display of artificial ruins or rockery, and here we meet the stumbling-block at once. Artificial ruins are rarely well constructed; most of those I have seen possess one and the same fault—i.e., they are overdone. Too much is attempted; too many lancet or other ornamental windows; too many clustered columns and carved corbels, and the like, and showing too little the damaging influence of time to cheat us into the belief that they are real; besides which, they are sometimes placed where there seems to be the least of all likelihood of their ever having been, while other incongruities render it advisable to hide them with plants as soon as convenient. Now let us turn to what is called rockwork. We now and then see this and so-called ruins blended together—a great monstrosity—but this is not often done, and the best examples of artificial rock are very creditable. But the site is often ill-chosen. I remember some years ago seeing a huge block resembling an irregular cube of sandstone as large as a small haystack, quite isolated on the lawn in front of a mansion near Newcastle-on-Tyne, the owner of which occupied a high position in the engineering world. The workman who manufactured this huge mass had performed his duty well, as it was a good imitation of sandstone, but the placing of a large mass of stone in front of a brick house in a level clayey district was more than open to criticism—it was decidedly bad. I have seen artificial rockwork put up in other places also liable to the same censure. How often do we see an incongruous mass of flints, scoriæ from a glass or iron furnace, bits of spar and granite, brick burrs, and the like, piled up against an Italian house, concealing its plinth, and, possibly, some other features on which the architect bestowed some pains to render them ornamental, but the miscellaneous character of the materials confounds the whole. There is, however, one place where sometimes such a pile as that alluded to may be tolerated near such dwellings, and that is near a suburban villa, where it is advisable to afford some shelter to the front door or other exposed part of the house, by erecting a bank against one corner to break the wind, and, if necessary, this bank may be fronted by something of the kind referred to, encouraging at the same time the growth of such trailing plants as are likely to run over it quickly. I am inclined to advise an earth bank in such places where immediate shelter is wanted, in preference to planting shrubs, as it is not always easy to get them to grow well in the position referred to.

Let us now take a peep at some of the artificial rockwork prepared by practised hands, where very often Ferns are the plants mostly intended to be cultivated; and here I expect to encounter no small amount of opposition, for my purpose is to attack much that is done, quite as freely for its lack of utility as for incongruities in the matter of taste. Of the latter I will not say much, as that has been already done in describing how often things of the kind exhibit too much intricacy, but in the matter of utility they are plainly faulty. I was painfully struck with this a short time ago on visiting the garden of a gentleman who devotes large sums to the embellishment of his glass houses and grounds, and who a year or two before my visit had a mass of artificial rockery put up out of doors for Fern-growing, employing an artist of high repute in such matters. The mass formed a sort of embankment by the side of a walk, and the workmanship, in an artistic point of view, was thought to be well done; but what was the working of it? Masses of stone coated over more or less with Portland cement afforded very little hold for vegetation when exposed to the drying influence of the open air: hence the impossibility of covering them with Ferns without almost continually watering them, and this in a neighbourhood where water was not at all times plentiful entailed a duty impossible to perform. Hence the grotesque projections and recesses had to remain in their naked loveliness or ugliness, whichever name was the more suitable, until Ivy and other creepers started from the bottom and grew up to hide them, so that only a few of the most robust Ferns could be grown. This is no overdrawn picture; the matter of after and continuous waterings seems to be taken as a perfect certainty by those to whom the erection of ferneries is often entrusted, and as in dry seasons such watering is not always possible, failure takes place, much to the chagrin of the owner, and causes no little unpleasantness to the working gardener. It is all very well to admire a Fern planted on a sort of table or shelf of the hardest stone, propped up from

the ground or stuck against a wall in such a way that no moisture from below can reach it by any means; but it must be remembered that as it is placed in such an artificial position, artificial means must also be used to keep it alive, and, like a plant in a pot, it will soon languish and die when water is withheld because it is not to be had. If designers of ferneries, rockeries, and Alpine gardens would take a few more lessons from Nature they would find that where vegetation does flourish there means are taken to make it do so, and where nakedness and sterility are the order of the day, the means are much the same as those which the rockwork artist adopts—i.e., there is no repository for either earth or water, hence the absence of vegetation. Of course, climatic influences are also at work in Nature's operations, but in man's handiwork they cannot well be blamed for such failures as are often met with.—J. ROBSON.

(To be continued.)

DROPMORE PINETUM.

It may be interesting to many of your readers to know the growth and progress that some of the trees have made in the last half-century, or say in the service of one man. Mr. Frost came to Dropmore on the 3rd of November, 1822, and consequently will have been there fifty years on the 3rd of November, 1872. A packet of Pine seed was sent to the late Lord Grenville from the Royal Horticultural Society, under the name of *Pinus taxifolia*, which has since been changed, in honour of poor Douglas, to *Abies Douglasii*; this packet of seed was put into the hands of Mr. Frost to sow in December, 1827, or early in January, 1828. Only three of the seeds vegetated; two of the trees are now growing at Dropmore, and one had to be cut down, being planted too near a fine *Araucaria*. The larger of the two is now 102 feet or more high, as the leader leans obliquely to the north. This tree is as perfect a specimen of its sort as can be grown. It is not necessary to be an enthusiast to enable any person to admire its gigantic proportions. The lowest branches are flat on the grass, occupying a space of 66 feet in diameter, from which they rise tapering to the top. The trunk at 3 feet up is 9 feet 7 inches in girth. I doubt if there is a finer or more perfect tree in Great Britain, without the additional interest of still having its raiser and trainer to keep its leaders single and give additional food to its surface-feeders. If we take some of the other Conifers, we find a *Pinus insignis*, purchased at Mr. Lee's Nursery, Hammersmith, planted in 1839 (a cutting plant), height 68 feet, girth of trunk 8 feet 7 inches, diameter of the branches 48 feet; *Cedrus Deodara*, planted 1834, height 52 feet, girth of trunk 9 feet, diameter of branches 47 feet—there are others better, but not so large a seedling; *Pinus insignis*, from the Royal Horticultural Society, planted in 1843, height 61 feet, girth of trunk 9 feet, diameter of branches 41 feet; *Pinus Benthamiana*, planted 1843, height 30 feet, girth of trunk 3 feet 4 inches, diameter of branches 30 feet; *Picea amabilis* (cutting plant), height 42 feet 8 inches, girth 3 feet 9 inches, diameter of branches 21 feet, planted 1847; *Pinus monticola*, planted 1835, height 58 feet 6 inches, diameter of branches 33 feet, girth of trunk 5 feet 6 inches; *Pinus Lambertiana*, planted 1841, now 40 feet high. The large *Araucaria* is 51 feet high, its girth of trunk at 3 feet from the ground is 6 feet 4 inches, the diameter of the branches 28 feet; it was planted in 1830. Whether it is the finest or highest in Great Britain or not I leave others to decide. I have seen none so perfect nor so high either in Great Britain or Ireland. A great portion of the success of these trees is no doubt due to the care in preparing the places before planting, also the great amount of surface-dressing. Mr. Frost gives them every autumn as many dressings as he can; they seem to root up into these however thickly put on.

It is proposed by some friends to present Mr. Frost with some sort of testimonial on his completing his fiftieth year at Dropmore in November next.—J. FLEMING, *Cliveden, Maidenhead*.

BEDDING GERANIUMS.

HAVING a house of these in full bloom, I cannot help feeling that their value as greenhouse plants is not fully recognised. What tribe of plants is so easily cultivated? Who can name another which will remain in full beauty for so long a time, or is so free from insect pests? Yet at our shows, at Birmingham for instance, we see the same old kinds year after year as

if there had been no improvement made. I do not show myself, but I should like to see my kinds well grown for once, and would give a prize of £3 or £4 for a dozen plants of kinds I have sent out. If other raisers would do the same with their varieties, I think it would make a far more interesting show than one of variegated kinds; there is so much more variety in flowering Geraniums with green leaves than there is amongst the "Tricolors."

Talking about variety, I think the Royal Horticultural Society ought to vary the time at which the country shows are held, otherwise people will not long travel great distances to see them. There was great sameness between the Birmingham and Nottingham shows.—J. R. PEARSON, *Chilwell*.

PROPAGATING BEDDING PLANTS.

NOT having a reserve ground in which to grow plants for the purpose, I take cuttings late, so as not to interfere with the symmetry of the flower-beds, and go over these several times, so that I have two or three successions of cuttings. Verbenas are generally placed in pots, Pelargoniums in wooden boxes of all sizes, from 18 inches by 6, and 2 inches deep, to 3 feet long, 9 inches wide, and 3 inches deep. In fact if I can obtain possession of any old wood, the boxes are made accordingly on wet days. There is no doubt that all our bedding Pelargoniums would strike well out of doors in August and September in an open border; but taking into consideration that the struck cuttings must be lifted before winter, and boxed or potted, I prefer potting or boxing the cuttings at once, so that we can move them without much trouble in an emergency; as a general rule those cuttings now, on which I depend for large healthy plants the following year, remain in their cutting quarters all through the winter, and more room is only given them in the spring. On an average, for cuttings of Verbenas about three-quarters of an inch is allowed, for variegated Geraniums 1½ inch, for stronger-growing kinds 2 inches, and for *Calceolarias* 1½ inch, and with this allowance they must grow as best they may until about March. I know that some advocate planting the cuttings out in a border, and then lifting and boxing or potting them, as it checks too free growth; but I can easily secure the same result in the boxes by letting the soil become rather dry. I wish it to be clearly understood that it is rarely my plants have more than the above room, or are potted or planted out until spring. I know it is desirable to pot separately in the autumn, but I never could find the room to do so, and therefore never attempted it.

If any should imitate me in using these rough-made wooden boxes there are a few things to be attended to, more especially if old unplanned wood be used. First, give the boxes inside and outside a good coating of limewash; this will greatly tend to prevent fungus. Then, again, as the boxes will be open enough, nothing much is required in the way of drainage, except the roughest part of the soil. In default of that some rough leaf mould might be used, but only if you are sure there is no spawn of fungi in it. I have so often suffered from this cause that I generally eschew such material altogether, as nothing is more unpleasant than to have the boxes covered with spawn, and find it creeping over the plants. Strong lime water will destroy fungus, but it often injures tender plants also. In filling these boxes, then, we prefer, on the whole, sandy loam, such as can be procured from the sides of a highway road, riddled through a half-inch sieve, the riddlings placed at the bottom, the riddled above, and then surfaced with the riddled soil and sand, with a surfacing of sand over all. One word more, if there is the least trace of fly or thrips on Verbenas or *Calceolarias*, pass the cuttings through a vessel of tobacco water without immersing the root end of the cutting.—R. F.

NOTES UPON FERNS.—No. 4.

IN my last communication (vol. xxii., page 360) I took a cursory glance at the variations to be found in the veins of Ferns, but far from exhausted the subject, for very much more might be written upon the peculiarities of these organs. As my articles, however, are not intended to be exhaustive, or to detail all the differences which these plants assume; and, moreover, as the tastes and requirements of so many thousands who read the Journal have to be catered for—sufficient, I think, has been said on those organs to enable "PTERRIS" and other lovers of Ferns to resume the subject and prosecute their

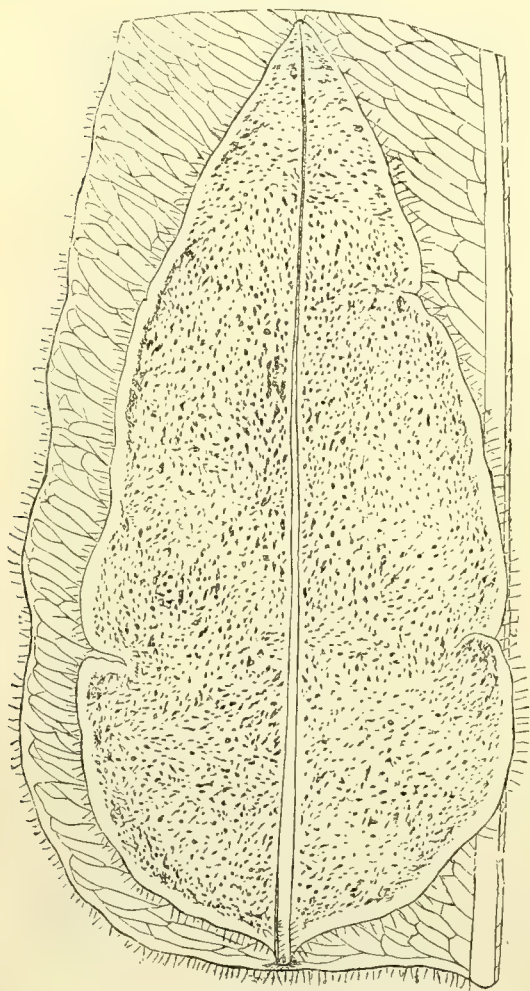
studies to any extent their inclinations may dictate, or their leisure hours allow.

Many assert that the veins of Ferns are a very doubtful guide to generic distinction; but it must be remembered that genera at the best are but arbitrary groups formed by the botanist for his own convenience, and therefore I consider any variation which can be found in one group of plants, sufficient to distinguish them from another group, is a great character found on which to establish generic distinction; and as the venation of Ferns is very distinct and not liable to change, it must, I think, be allowed that they form a safe and natural guide for this purpose to the student, especially when used in conjunction with the mode of growth and manner of fructification.

I shall, therefore, leave my readers to prosecute their studies of the veins, and proceed to briefly examine the various modes of fructification, or the manner of fruiting.

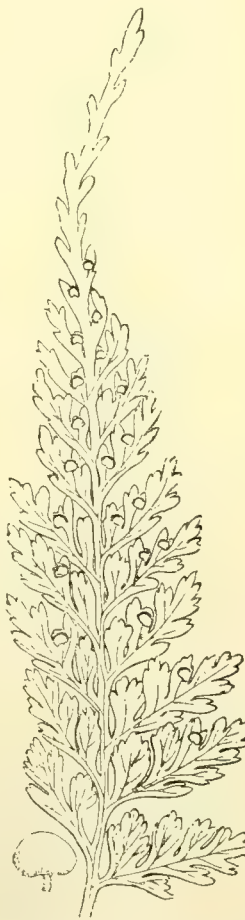
tion of the fertile fronds, the fructification assumes a spike-like character.

In speaking of the fructification of Ferns it is usual to call the place on which the sporangia are situated the *receptacle*; thus, when on the points of the veins it is said to be *terminal*, a familiar example of which may be found in *Leucostegia immersa* (see illustration). Again, the receptacle is said to be *axillary* when situated in the forking of the veins; an example of this form may be seen in the genus *Cystopteris*. The *basal* receptacle is familiarly represented in some species of *Oleandra*, whilst a *medial* receptacle may be understood by the figure of *Goniopteris crenata*. In this case the receptacle is called *medial* and *punctiform*, whilst in the case of *Platyserium alceiorne* it is termed *amorphous*, and *elongated* when disposed in lines. The sporangia are the spore-cases which contain the minute spores, and these spore-cases are borne in clusters upon the receptacle. They are divided into two sec-

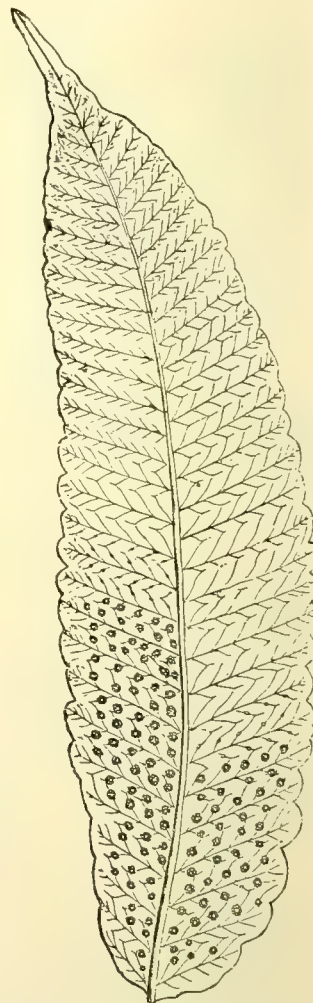


Hymenodium erinitum.

The statement may be accepted in a general way that the fructification of Ferns is produced more or less regularly upon the under side of the fronds, either in round masses or in lines, the former being situated on the points of short veins, the latter running parallel with and upon them. Some few exceptions, however, must be taken to this statement, as, for example, in such cases as the genus *Trichomanes*, where they are situated upon a vein in the margin, or become exserted and stand upon the very edge of the fronds. Again, in the tribe *Acrostichæ* they cover the whole of the under side; a good idea of this may be found by the illustration of *Hymenodium erinitum*. Another variation from this rule may be found in our native Moon-wort, *Botrychium Lunaria*, and the Royal Fern, *Osmunda regalis*. In these cases, through the contrac-



Leucostegia immersa.

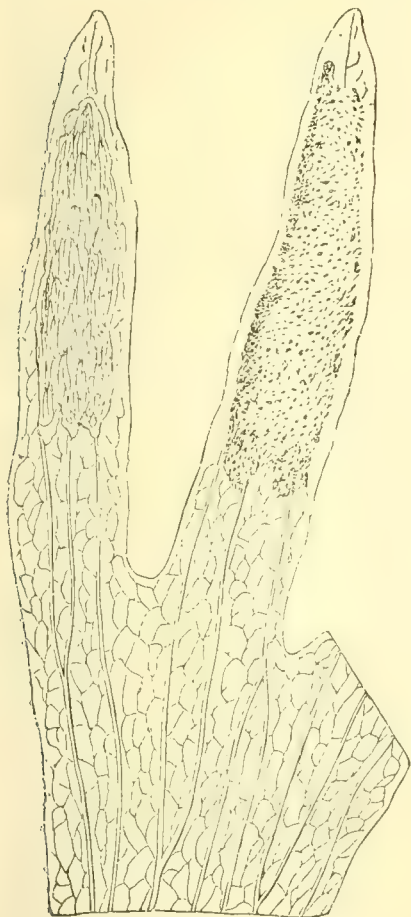
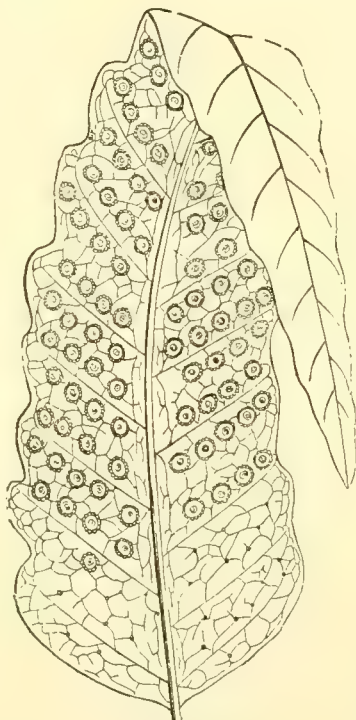
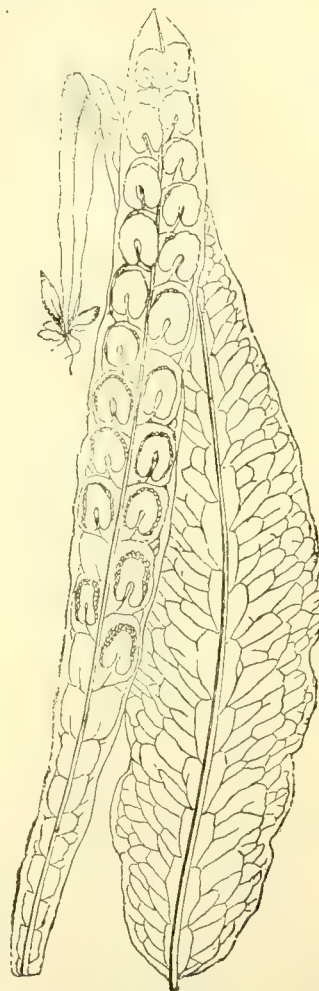
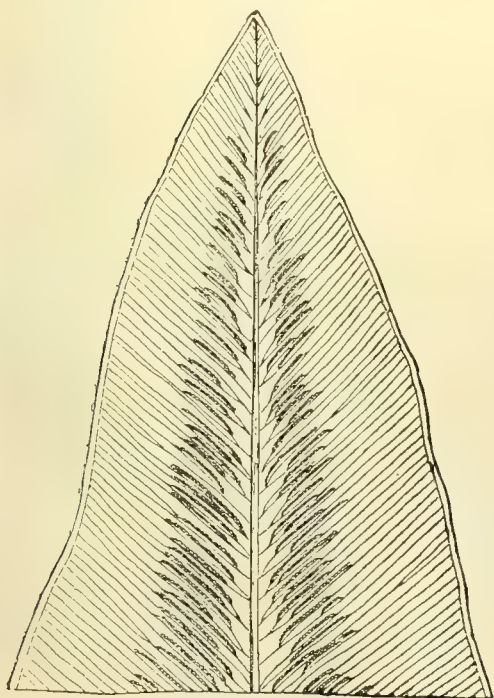


Goniopteris crenata.

tions—those having a jointed ring surrounding them, and called *annulate*, and those being destitute of this ring, and thus *exannulate*. The position which this ring takes is either *vertical*, *horizontal*, or *oblique*, each being characteristic of certain genera, but I do not purpose going into details on this subject. The masses of the sporangia clustered together on the receptacles are called *sori*. These in some cases are naked, in others they are covered with more or less membranous or coriaceous scales, which are called *indusia*. This organ is sometimes persistent, but more often very fugacious, and although it affords valuable aids to generic characters, too much reliance must not be placed upon it on this account.

I shall now endeavour to give some illustrations of the various kinds of indusium. The special indusia are membra-

nous in texture, and are attached to the receptacle in various ways. The accompanying figure of *Aspidium trifoliatum* will give a good idea of the peltate orbicular indusium. In this case it is attached in the centre, having its margins quite free ;

*Platycerium aleicorne.**Aspidium trifoliatum**Fadyenia proliфера.**Neottopteris nidus.**Cyathea elegans.**Balantium Culcita.*

another form of special indusia is shown in the figure of *Fadyenia prolifera*. In this case it is attached on one side, and thus becomes a reniform sub-oblong indusium, or by a still further attachment along one side it becomes linear, as shown in the illustration of *Neottopteris nidus*, whilst in some instances it becomes cup-like (calyciform), as shown in the figure of *Cyathea elegans*. Another form of indusia is that called the *accessory indusia*, as an example of which I may instance *Balanium Culeita*. In this case the margin of the frond becomes changed, assumes the form of and joins the true indusia, and thus becomes a somewhat two-lipped cup. The last form of indusia to which I shall draw the attention of my readers is called the *universal indusia*. This consists simply of the contracted fertile frond, the margins of which are rolled inwards, and thus enclose and protect the whole of the sori, a good example of which may be found in the Parsley Fern, *Allosorus crispus*.—EXPERTO CREDE.

THE POTATO DISEASE.

"Thus I, Colin Clout,
As I go about,
And up and down I walk,
I hear the people talk."

A GREAT deal has been said, in exaggeration, about the Potato disease, let alone all those letters in the *Times*, so wonderfully made, and I must say rather old in ideas; for have not those electrical shocks, the wide planting and all the silicates, appeared years ago in these very pages? Well, better late than never: there is a great deal of truth in them if one is practical enough to sift it from the nonsense written.

For my own part I am sorry to say exaggeration will apply to me with a vengeance, for never since the disease first appeared in 1845 has it affected my crops so direly, and this in opposite soils and different counties. I have it in Oxfordshire, on the stonebrash of Stonesfield; at Woodstock, on a made dark stony loam, with glass bottles, potsherds, oyster-shells, and bones galore, shot down as a sub-layer centuries ago, and which for the last twenty-five years I have never allowed to rest, but kept moving and disintegrating by annual trenchings, and the soil otherwise recruited with dry earth-closet soil, and house sewage, woody fibre, and old thatch; so that way of working is nothing new, but it is a very good and proper way of going to work. Mr. Moule is quite right so far, and very lucky in his Potatoes having escaped the murrain; but I should be sorry to pin my faith on the power of any "phospho-silicate manure" to eradicate the disease. At Bedford, in Middlesex, I rent some land—a sandy loam on gravel, very poor—into which I had well-trenched raw straw London stable-manure last autumn, and got the soil limed at the rate of seventy bushels per acre just before Potato-planting this spring; here the tubers are rotted worse than with me in Oxfordshire. I am staying at Brighton, and took a drive on the Lewes Road the other day, and here Mr. Moule's silicate system can be seen in all its glory, or rather a type of it, for in a field sloping down to the road in the vicinity of the barracks—a gravelly soil on the chalk—are Potatoes in as flourishing a condition as can be, haulm ripening-off healthily, and I should think scarcely a diseased tuber to be found, and where town refuse, broken bottles, and crocks crop-out most palpably. Now, I had conscientiously read my *Times* and Mr. Moule's letter merely a few hours before I saw the above pleasant sight, and if my own sad case had not anteriorly presented itself, I should have been ready to have sworn that Mr. Moule had hit the disease on its head most satisfactorily. I do not believe any of us can do that, but it is no reason why we should not all do as Mr. Moule is doing practically, and to the best of our ability. Another instance: I was walking up from the sea towards the Wick, and in a corner garden where, no doubt, refuse had been shot, an old man was digging up what appeared to me to be Turner's Flourball Potatoes, "Snowball" they call them here; the haulm had ripened, and the tubers were perfect. In another part of the garden were what I dubbed some years ago in "The Cottage Gardener" "Brighton Regents," a late sort; they were green as grass, and without a fatal spot; the old man told me the tubers were perfect. I was sorry he was called away to his dinner, or I should have "been in" for a longer chat.

However, as we have excellent Potatoes to eat, and as the samples that I continually observe in the market and at the shops are so free from disease, I hope that the clamour is increased by interested persons, and that other large districts as

well as the surrounding country of Brighton may be free from the murrain. One thing must be borne in mind—Brighton in its soil must be naturally a favoured district, being, as it is, a sharpish gravel on the chalk. Nevertheless, agreeably to my fine poetical text, I have noticed a great difference in the greenery of Potato plots in closely adjacent neighbourhoods, through a rather extensive distance in travel, which leads me to hope that the late sorts may ripen off free of the disease; and there is one consolation with which I buoy myself up—viz., I have frequently noticed when our early sorts get stricken, the later kinds escape, particularly in our northern and more important Potato districts. We shall see. Early sorts for the south, western, and midland counties are, nevertheless, those which we should cultivate.

I cannot help, from long years of battles with the Potato disease, thinking that the origin of the murrain comes from the effect of the thunder and lightning, and that indescribable state of the atmosphere then predominating—a stink that can be felt sometimes; and when accompanied, as it was this season, with continued wet and heat, "Despair" may be placarded on those Potato plots which are just about to reach maturity, at whatever time of the year such a state of things may occur, unless they are at once taken up.

In 1845 I had a considerable breadth of the old Birmingham Blues under my hands, at Stanton Lacey, near Ludlow, in Shropshire. My hobby then was Potatoes, and it was my pride to beat my neighbours in their cultivation. The disease came and blackened them; a secret satisfaction was indulged in I could plainly see, and it was said I had been experimenting to some purpose. I was always earlier than my neighbours, but ere long my friends' crops became blackened also, and then they said my "tampering" was the cause. Soon however, the newspapers taught them differently. I set to work and had my Potatoes taken up, salted, boiled, and rammed down in old cider-barrels (previously sunk into the earth), rode off to "Welch Knighton," and bought some pigs, which my neighbours called "greyhounds," and otherwise smothered me with an abundance of "chaff." I never knew hungry pigs do better than those did on the "pickled taters," and by the time they were finished-off (about the following Christmas), I sold their carcasses to Mr. Harding, grocer, of Ludlow, averaging 21 score a-piece. I "chaffed" my neighbours then. I told you all about this years ago, and I cannot recommend a better plan even at the present day.

We must suffer, however, to be fine, and my pride this year of having attained to nearly the perfection that I set before myself in regard to the Potato, induced me to leave my crops in the ground to "crow over them" to my friends, and all other comers who chose to view them. I gained my object, and lost my crops. What I should have done, and what I recommend all others to do, is to grow early and second early ripeners, and then when the disease first appears, unhesitatingly and carefully to lift their crops, and to place them at once in the dark, in layers about a foot thick, where they will ripen-off as much as they can, and almost equally well as when they are left without their foliage in the soil. I have frequently tried cutting the haulm off, but then the shortened stems exude sap, and sour the soil into fermentation about the tubers, which makes the remedy worse than the disease. To tread firmly on each side of the stems, and pull them bodily away is the better practice; but then the ground cannot be at once sown with Turnips, or any other fleeting crop, and there is much extra work in digging them up minus their tops, on account of not knowing where to prick for them; and, as I said above, they will ripen almost as well in a dark place, minus their foliage, as in the soil where they grew. Agreed, they cannot be so good one way or the other from the premature loss of the foliage, but then one does derive all the advantages which are to be obtained. If they will not boil mealy, mash them; and to those who can in addition have a little dripping, or butter, or cream, it would be well under the circumstances, or for a housewife to pop them into the pot with her bit of bacon and Cabbage. I do not think a hungry family would quarrel with her for that matter, or care much about the mealiness; at any rate, too fastidious people could get the best use made of them for the pigs as above.

With regard to seed for another season, these unripened tubers are sufficiently matured; in fact, I prefer an unripened tuber for seed, and always choose the medium-sized sets, as so considered, in preference to the large and best-ripened tubers; and from the day that I take them up, I keep them in single layers on shelves or boards, or in any other dry place, in twi-

light, free from frost till planting time, and am very careful not to injure their first and best shoots. A few days before planting I go to the trouble of delving-out with a penknife every shoot except one, the first and best. One shoot is quite sufficient to leave on a moderate-sized tuber, with careful planting in order not to rub it off, and where this twilight-single-layering plan is at once adopted, it signifies nothing whether a Potato-set is greened by the sun in the open air or no. It becomes sufficiently greened and toughened when spread out in moderate light, in preparation for seed. My pride has got a sufficient fall this year never to allow my seed Potatoes to be destroyed in future.

Very rich people might cover an acre of ground or so with a glass structure, and grow Potatoes under it, giving plenty of ventilation and artificial watering. This, I consider, is the only way to set the disease at defiance, with the glass as a nonconductor and repellant of the fungoid rain during thundery, hot, muggy weather. I grew my newest crosses from seed under glass last season, and not a symptom of disease appeared on them. I shall lose two-thirds of them this year from disease in the open ground. What do you think of that? The best strains of the best sorts studied and combined for flavour, form, and appearance, years of trials dashed away just at the close of a lifetime! Still I hope for consolation, for out of about a thousand seedlings I may fairly calculate on some three hundred sorts of my pretty ones being left—enough you may possibly think for any man with a conscience.—UPWARDS AND ONWARDS.

We are of opinion that the outcry proclaiming the extensive prevalence of this scourge is vastly exaggerated. We know from personal inspection that the Potato disease is not prevalent in the Isle of Man, where it is the principal crop, and from whence thousands of tons are annually exported. We also hear that in Ireland the disease is not excessively developed. *The Irish Farmers' Gazette*, one of the most ably conducted journals of that island says, "So far as Ireland is concerned, it would be folly to deny that the state of the Potato crop is far from being satisfactory. Disease exists in a large number of districts, and owing to the unfavourable weather for planting last spring, until a considerable part of the season had passed, the tubers in many parts of the country are small and immature, so that, as a County Kilkenny farmer expressed it, a large extent of ground has to be 'stript' before a sufficient quantity of fair-sized tubers can be obtained to send to market. With all this, there is nothing like a panic in Ireland, nor is there the slightest dread that 'a second Irish famine' is about to occur, as a London daily, noted for its sensational proclivities, recently asserted."

Much do we marvel to see any man of intelligence affirm that lightning accompanied by storms in early autumn occasions the disease. The wet accompanying the high temperatures of that season may promote the progress of the putrefaction of the tubers, but the disease was in them before the occurrence of these storms.

Twenty-five years since the writer of this published as follows:—This disease was most extensively destructive of the tubers of the Potato crop in the British Islands in 1845 and 1846. But it is not a new disease to the vegetable nosologist, nor confined to these Islands.

In July, August, or early in September, whilst the fibres connecting the tubers with the stem are still full of sap and the vital circulation is still in force, this disease makes its appearance. The leaves and stems become blotched with black decayed parts: the putrefaction or ulceration is moist, and, if the weather be wet and ungenial, proceeds so rapidly, that an unpleasant effluvia is very perceptibly evolved. The stems ulcerating and decaying whilst the fibres connecting the tubers with them are still vigorous, the infectious ichor is communicated with the sap, and, passing into the still immature and juicy tubers, imparts to them the gangrene. The infection is first apparent at the end nearest the connecting fibre, spreads gradually throughout the liber of the tuber, rendering it brown like a decayed Apple, and lastly, causing the putrefaction of the whole interior. Previously to this final decay the increased specific gravity of the tuber is very remarkable, amounting to about one-third more than when the Potato is healthy. When boiled the infected portions become black; but when submitted to a dry heat of about 200° they rapidly part with moisture, and the progress of the ulceration is checked, if not entirely stopped.

When the disease makes its appearance before the stems and

foliage are dead, it has been judiciously recommended by Dr. Lindley that these should be pulled up. This, of course, prevents the communication of infected sap to the tubers. Cutting off the stems has been found ineffectual, apparently because some of the stem then remains to impart the sap. Messrs. Dillistone, of Sturmer Nursery, Suffolk, say, "We tried the plan of pulling up the haulm immediately upon perceiving the disease this year on the early varieties—viz., Shaws, Ash-leaved Kidney, &c., and the result is all that could be desired. We have lost scarcely any. The tops were left on the ends of some rows of Shaws for the sake of experiment, but nearly all the Potatoes spoiled. Mowing off the tops we find to be useless."

It has been suggested that either fungi or insects are the cause of the disease; but I think both these are excluded by the fact that it appears in every quarter and latitude of the globe—in the frigid climate of North America, in the temperate locality of Devonshire, and between the tropics at St. Helena. Now, I know of no fungus or insect that has its habitat alike uninfluenced by heat or cold; and even less conceivable is it that a fungus or insect is just created for the purpose of destroying the Potato crop. The fungus or insect, it is more rational to conclude, must have existed throughout time, and its ravages have only been felt by increasing degrees, as the Potato has gradually reached a state of disease fitted for the nutriment of the parasite. The same and other facts preclude unfavourable seasons from being the cause of the disease, though they may hasten its progress. The disease was quite as prevalent in 1846 as in 1845, yet no two years could have had seasons more different. It is quite clear that no local cause—such as the employment of any particular manure, the staple of the soil, or the mode of culture—can be the origin of the disease, for the crop has been grown on all possible varieties of arable soil, with and without manures, and in various modes; the sets have been dug-in and dibbled-in; the plants have been earthed-up and left unearthed; yet in all and in each has the disease appeared. The cause, then, must be one of universal applicability, for the disease is epidemic in the widest sense of the term. Does it arise from the vital powers of the varieties being exhausted? No; for, in many instances, the most recently raised from seed are as productive of diseased tubers as the oldest cultivated kinds. Does it arise from the almost universal practice of taking up the tubers as soon as the stems are dying or dead, and keeping those tubers out of the soil for four, five, or more months? I am of opinion that this is the cause. The practice is nearly universal: it is the practice throughout Europe, as it is in America, St. Helena, and the hill districts of Hindostan; and in all those regions the disease prevails. It is not the practice in New Zealand, and there the disease is unknown.

Now, has the withdrawal of bulbs and tubers from the soil the effect of gradually rendering them and their progeny diseased? I think no horticulturist or vegetable physiologist will answer in the negative. A writer in the *Gardeners' Chronicle* of the year 1846 (p. 478), most correctly observes that the bulbs of Hyacinths, Tulips, and Crocuses keep well in the ground, but if taken up have a strong tendency to decay. But what effect has this treatment upon the plants to which they give birth? Why, it imparts to them disease. The strain, the beauteous variegation of the Tulip's petals, are the effects of disease. Leave the bulb in the soil throughout the year and it returns to its natural vigour and simple colours. No variety occasioned and preserved by such artificial treatment will endure beyond a few years. It is no effectual objection that seedling Potatoes are now affected with the same disease, for such diseases are hereditary in vegetables as well as in animals, and the seedling's tubers have been subjected to the same keeping out of the soil for months as were its parents. Neither is it an effectual objection to say that only of late years the disease has prevailed, for it has been noticed for full fifteen years, and it is only by such detention from the soil through a series of years that the disease is advanced to its prevailing malignant form. It is only thus that varieties of the Tulip and Dahlia are gradually destroyed.*

Tubers and bulbs kept out of the soil, whether freely exposed or in covered heaps, all undergo the same chemical changes—absorbing oxygen and emitting carbonic acid, and

* It is no new disease—no modern introduction into the lists of vegetable nosology. I have noticed it for the last fifteen years. From 1850 to 1841 it seriously injured the Potato crops of Germany, and is noticed by Von Martius as the Potato gangrene.—Von Martius "On the Epidemics of Potatoes."

the longer they are so kept, so proportionately does all experience show that they lose the power of healthy vegetation. In the Potato so treated the foliage produced is diminished, and liable to the curl and its premature decay; and I have a strong opinion that the small produce and early decay of the tubers has its origin from the same cause.

I quite agree with Dr. Lyon Playfair in thinking that the disease itself is an ulceration or decay of the Potato tissue, arising first in the sap of the leaves, and, like all other putrefactions, attended by the phenomenon of combination with an unnaturally large amount of oxygen. The diseased spots in the tubers appear first near the spiral vessels which convey air to the internal cells. The rapid decay of the cells, I agree with Dr. Playfair in thinking, arises from their unnaturally weak constitution—a weakness we have seen, from Mr. Grey's experiments and almost universal experience, occasioned by a lengthened detention of the tubers from the soil.

From those opinions the writer has not changed, but he has changed from the opinion that autumn planting would prevent the occurrence of the disease. He so thought because he concluded that such planting would insure an earlier ripening of the tubers; but experience has proved that autumn-planted Potatoes ripen their crops later than spring-planted Potatoes of the same variety. He does not alter, however, from his experience-founded conviction that early-ripening varieties are safe from the disease. He recommends that varieties producing tubers ready for storing by the end of July should be exclusively cultivated. If this practice be adopted, and the Potatoes are stored in a shed in layers, alternating with dry sand or dry earth, there will never be any serious loss from "the Potato murrain."—G.

DURATION OF STANDARD ROSES.

In your impression of August 29th, Mr. Bartrum asks the question, "To what age standard Roses may be expected to last?" and I venture to give some results of my own experience, in the hope that others also will let us know the conclusions at which they have arrived.

With regard to Hybrid Perpetuals, the class of Roses in which we take most interest, the answer is not a very easy one, as we must take into consideration accidents of temperature as well as natural decay. The winters of 1860 and 1870 well nigh cleared off all the old standards which were then in existence, and those which were not directly frozen to death were so injured as to die shortly afterwards. I, in common with many others, lost at least nine-tenths of my standards on each occasion. A few, however, survived, and of these I have Louise Odier and *Enfant de Mont Carmel* planted in 1859, *Jules Margottin* about 1862. These are all I can identify, though probably there may be others as old. The former two are in bad order, and would have been removed ere now, but that the place where they were first planted was the front of a plantation, which has so far overgrown the border as to render it useless to plant any Rose there which I care about. *Jules Margottin* in a better position is in good health and vigorous, but the flowers are small.

I have several more which I know to be seven or eight years old, and I daresay I should have many but for the two great frosts, my custom of weeding-out all second-rate sorts (and there are few which are not superseded in six years), and all, even of the best varieties, which show signs of old age, as soon as I can supply their place with younger plants.

Of summer Roses I have but few, but of those some half-dozen grow where they were planted in 1856 under similar circumstances to the two mentioned above, and one, *La Joyeuse*, which I believe (I am not certain) to be twenty-four years old, still vigorous, in spite of age and neglect, as are several others.

How long it is advisable to keep standard Roses is another matter; not many, I think, will produce good flowers for more than five or six years, and if I could spare time for the constant budding required I would have none for more than three.

The age of Roses on their own roots is much more extended, and seems practically indefinite. I remember an old *Maiden's Blush*, which was said to have been an old Rose when my father was a boy, say eighty years ago, and was vigorous and healthy till, alas! modern improvements, quite lately, improved it off the face of the earth.

I have very few Roses on their own roots; one I know to be twenty-three years old—*Lamarque*; it has been moved twice,

and killed down twice, and covers a wall for the space of more than 100 square feet. Of the *Manetti* standards I know practically nothing, as Roses do not take kindly or grow well on it with me. I suppose my soil is too heavy, suiting *Briars* admirably.—DUCKWING.

Your correspondent, page 162, wishes to know if worked Roses will last in good health longer than three years, and in doing so opens up a very large question. Many undoubtedly perish after two years, or so degenerate as to be worthless, while others with good constitutions will live and thrive for a score of years or more. Those who doubt the ability of Roses to thrive so long should see a lot planted by the late Mr. Rogers at Riverhill. They are principally strong-growing kinds of *Perpetuals* and *Hybrid Chinas*. The latter are trained on the umbrella principle, the old shoots being taken out and young ones tied down each year; they thrive amazingly, and are trees in fact as well as name.

One great cause of failure is, I think, attributable to working on stocks not properly ripened. I consider the stock should have at least two years' growth before it is taken from its native hedge. Many are, however, mere suckers, and as such are frozen through the first year they are planted; and though they may grow strong enough to be budded, the seeds of disease are in them, and in a short time the trees will perish.

Another cause of failure arises from amateurs persisting in trying to keep tender Roses out of doors when they ought to be taken up and put in a house every winter. In some of the principal nurseries this course is followed, not only with *Teas* and *Noisettes*, but also with many of the delicate *Hybrid Perpetuals*.

The Roses here have been all that we could wish this season, and many kinds before thought worthless have turned out first-rate. Cloth of Gold flowers freely enough if the shoots are laid-in entire.

I should like to add a word on October Peas. With me they invariably fail, nor do I ever remember seeing a crop worth the name in the middle of October.—CHARLES WOODHAMS, *Barn Elms Park, Barnes*.

GREAT INTERNATIONAL FRUIT SHOW.

We are in a position to announce that there will be a Great International Fruit Show held at South Kensington on Wednesday, November 6th, in which all home and foreign growers of fruit are invited to take part, and on which occasion prizes will be offered for very varied collections of fruits. The schedule will be found a copious one.

THE BEDDING-OUT IN THE LONDON PARKS.

(Continued from page 167.)

In the account already given of the bedding in Hyde Park, we left off at the *Marble Arch*; we will now strike across the Park to Mr. Chamberlain's house, in front of which is an admirably executed piece of bedding in the form of a semicircle. In front of the house is a semicircle, at the outside, next the Park, a semicircular border, and in the space between the two are circular and heart-shaped beds in two ranks. Beginning at the outside, first there is a row of *Echeveria secunda glauca*, next *Mesembryanthemum cordifolium variegatum*; in the middle, small ovals of *Gnaphalium lanatum*, surrounded by a chain of *Alternanthera magnifica*, which in its turn is surrounded by a chain of *Golden Feather Pyrethrum*, between which and triangles of *Antennaria tomentosa* the ground is carpeted with *Alternanthera amœna*, which has a bright and lively appearance. At each end of this border are planted miscellaneous fine-foliaged plants, as *Palms*, *Dracenas*, *Coleuses*, and *Solanums*. Coming now to the heart-shaped beds forming the first rank in the space included between the two semicircles, the two end beds are margined with *Sempervivum tabuleforme*, edged with *Alternanthera amœna*, and filled with a mixture of white-variegated *Pelargoniums* and *Purple King Verbena*. The other two heart beds are margined with *Sempervivum californicum*, edged with *Alternanthera magnifica*, and filled with a mixture of bronze-leaved *Pelargoniums* and *Viola cornuta*. The circles forming the inner rank are all margined with *Echeveria*, and edged with *Mesembryanthemum cordifolium variegatum*, next to which is a band of *Alternanthera magnifica*, the centre being occupied with *Geraniums*, except in the middle circle, which has a rich

centre of *Coleus Verschaffelti*. The back semicircle is margined and edged like the circles, and within there are *Achyranthes Verschaffelti* and Mrs. Pollock *Pelargonium*, the remainder of the bed being a fine mass of Fire King. These are the dry details of one of the most effective examples of bedding we have seen this year, but to be duly appreciated it must be seen.

By the side of the broad walk to the old Palace of Kensington there are several fine oblong beds of Scarlet *Pelargoniums*, surrounded with White Perfection *Lobelia*, edged with *Alternanthera magnifica*, and margined by Golden Feather *Pyrethrum*. Alternately with these are circles of Pillar of Gold *Calceolaria* in fine bloom. The beds in front of the broad space of grass are also effectively planted with *Coleus Verschaffelti*, blue *Lobelias*, and variegated *Pelargoniums*, and the oblongs with scarlet varieties and yellow *Calceolarias*.

Pursuing our circle we next come to the subtropical plants, which are to be found between Albert Gate and St. George's Gate. We miss this year the tall Abyssinian Bananas, noble plants, but their leaves were so torn by the long sweep of the winds across the Park last year, that wisely Palms and other harder-leaved plants have been employed this season. Noticeable among the beds in this part are a half-moon one of *Caladium esculentum*, carpeted with Dell's Beet, and surrounded with Golden *Pyrethrum*. A scroll bed of the Coral Tree (*Erythrina Crista-galli*) is also very striking, and there are numerous fine beds of Indiarubber Plants, Cannas, Castor Oil Plants, and Solanums. Of the last-named genus, *S. marginatum* and *Warszewiczoides* are singularly effective. Beds in which are *Acacia lophantha*, with the ground carpeted with *Amaranthus bicolor*, and of the graceful Fern-like *Grevillea robusta* carpeted with *Koniga maritima variegata*, mixed with Brilliant blue *Lobelia*, a splendid kind, edged with *Begonia weltoniensis*, and margined with *Alternantheras*, are well worthy of note. The *Acacias* along the drive form the centres of little circles of blue, yellow, and purple *Violas*, which were till lately very full of bloom. In the subtropical beds not already referred to, the margins and edgings of which it would be tedious to describe, we noticed *Musa Cavendishii*, with a carpeting of the pale-blue-flowered *Plumbago capensis*; a heart-shaped bed of *Wigandia caracasana*, a large heart-shaped bed of *Polymnia grandis*, and beds of *Musa superba*, which, though not of such noble port as the Abyssinian Banana, is, nevertheless, a grand plant for sub-tropical gardening, and the roots can be kept over the winter in a cellar if dried like *Hyacinths* after flowering. Of isolated specimens there are handsome examples of *Dracena lineata*, *Streitzia Nicolai*, *Dracena australis* 13 or 14 feet high, *D. Veitchii*, *Musa Ensate*, Variegated New Zealand Flax; and among Palms *Seaforthia elegans*, *Chamærops humilis*, *Lantania borbonica*, the Date Palm, *Areca rubra*, and *Seaforthia Cunninghamii*, the last-named very graceful.

Crossing into the Green Park, we find by the side of the walk parallel to Piccadilly a charming series of circular and oblong beds, two of the former being placed between every two of the latter. As far as Down Street they have a margin of Blue King *Lobelia*, within which is an edging of *Alternanthera magnifica* surrounding a band of *Dactylis glomerata variegata*, and the middle portion of the oblongs is filled with scarlet *Pelargoniums*, and the circles with variegated *Pelargoniums*. From Down Street to the late Lord Palmerston's, *Echeveria secunda glauca* is used as a margin, *Alternanthera amena* as an edging, and Golden Feather *Pyrethrum* as a first row. The centres of the circles are filled with variegated *Pelargoniums* mixed with bedding *Violas* or *Lobelias*, the oblongs with scarlet *Pelargoniums*, forming fine masses of bloom, especially *Stella*, *Lucius*, and *Culford Rose*. The mixture of the *Geraniums* and *Lobelias* or blue *Violas* in this series, as well as the use of the variegated *Dactylis* in that previously noticed, has a peculiarly agreeable effect. Just opposite Lord Palmerston's is a fine bed of *Coleus Verschaffelti*, surrounded with Robert Fish golden-leaved *Pelargonium*. From this point to the end of the walk the beds are all edged with *Alternanthera magnifica*, and margined with Golden Feather *Pyrethrum*, *Cineraria maritima* being planted as a first row, and the centres of the circles filled with a mixture of variegated *Pelargoniums* and blue *Lobelias* or *Violas*, the oblongs with scarlet *Pelargoniums*. Of these Lord Palmerston is conspicuous by its profusion of bloom; circles of bronze-leaved kinds mixed with *Viola cornuta* or Blue King *Lobelia*, and Mrs. Pollock mixed with *Viola Blue Perfection*, are also very effective.

On the east of the park we have a series of oblong beds, but as many of them are much exposed they are not generally so

fine as the beds already noted. They are margined with *Stachys lanata*, edged with *Iresine Herbstii*, and planted with scarlet *Pelargoniums*, or with silver variegated kinds and Purple King or Sportsman *Verbena*, or blue *Lobelias*.

Crossing St. James's Park, the next place which we shall note is St. Margaret's Square, close to the Houses of Parliament. Here there are two enclosures rather longer than they are broad, surrounded by a low wall and open iron railing, and separated by a pathway. The high condition of the turf is a triumph of London gardening; the sward is as green, as velvety, and as close as it could be a hundred miles from the London smoke; in fact we begin to think the London smoke cannot be so bad after all as it is represented to be, or rather as it really was before so many large open spaces were formed. Along the sides and ends of the enclosure are oblong beds with circular beds at the corners, the former margined with *Echeveria secunda glauca*, and edged with White Perfection *Lobelia*, the latter margined with *Sempervivum montanum*, and edged with White Perfection *Lobelia*. Within the edgings the first row in the oblongs is Golden Fleece *Pelargonium*, in the circles Tom Thumb *Ageratum*. The centres of the oblongs are filled in with Glow, Indian Yellow, Waltham Seedling, and other scarlet *Pelargoniums*; the circles with bronze or silver-variegated *Pelargoniums* mixed with blue *Lobelia*. In the southern enclosure the planting is to match that of the northern one, but blue *Lobelia* is employed as an edging instead of the white-flowered.

In New Palace Yard, close at hand, there are some beds of Cannas and *Coleus*, intermixed with *Abutilon Thompsoni*.

The preceding details of the bedding-out in the parks and gardens under Mr. Gibson's management, from the very fact of their being details and not generalities, will show that the planting is worthy of imitation. Mr. Gibson's talents in forming beautiful combinations of flowers and foliage, and in producing landscape effect, are too well known to our readers to need further comment; but it would be unjust to withhold from Mr. Chamberlain, Mr. Gibson's estimable lieutenant, his mead of praise for the way in which he assists his chief in marshalling those big battalions in scarlet, white, and blue, with many-coloured facings.

RARE BUTTERFLY.—We have just taken (August 29th) the Camberwell Beauty, *Vanessa Antiope*. It was seen resting on the front wall-plate of a Fig house; it next visited the Peach houses, where I made an unsuccessful attempt to capture it. In half an hour it came back to nearly the same spot, and was finally taken resting on the border close to a few Peaches that were ripening on the open wall. I think it is more than likely it has a taste for fruit like its near relative *V. Atalanta*.—Wm. ROBINS, *The Gardens, Oakley Park, Suffolk*.

ADARE MANOR.—No. 1.

COUNTY LIMERICK, IRELAND.

ADARE MANOR is situated about eleven miles south-west of Limerick, and is a residence of the Earl of Dunraven. It is a most remarkable place in the history of Ireland; the immense piles of ruins scattered over the demesne give the idea that we are on the ruins of some ancient city. The modern mansion is of the mixed Tudor style.

It was among the acres of surrounding ruins we had the pleasure of making the acquaintance of the late Earl of Dunraven many years ago. The last time we met was among the ruins of Desmond Castle, where he had a hundred men at work clearing out the moats, tracing out the old foundations, and picking up the buried curiosities of that ancient seat of warriors; and in last October we saw the mortal remains of the warm-hearted and zealous Earl laid in the vault of what was the Augustinian Abbey. The splendid book which the late Earl published on the antiquities, and the still larger work now publishing, according to his testamentary directions, on the abbeys, &c., of Ireland, will be a lasting memorial of his genius and love for antiquarian research; and his love for arboriculture is equally illustrated by the beautiful plantations rising up so artistically and picturesquely round Adare, and in the county Kerry, in which he took such singular delight.

Adare has been for ages the residence of the ancient family of O'Quin, of Inchiquin. The O'Quins, of Inchiquin, in the county of Clare (of which family the Earl of Dunraven is a

direct descendant), are a branch of the "O'Briens," kings of Munster, of whom the last of the race was "Rory the Black," who, it is said, married the daughter of a soldier serving the Lord Inchiquin, and this was supposed to have caused the death of his father, who wished him to marry a daughter of O'Brien, Lord of Thomond. This caused a disruption between the O'Briens and Rory the Black, which ended in a fierce war, and the clan of O'Quin were driven from their patrimony of Inchiquin, and crossed the Shannon into Limerick, and the noble owner of Adare is now the direct representative of the ancient clan.

The first O'Quin who settled at Adare died in 1671, and was buried in the old Franciscan Abbey; his son, Theodore Quin, born in 1645, may justly be esteemed as the second founder or restorer of the family, and from his time we date the formation of the demesne of Adare.

The beauty of the park at Adare is much enhanced by the

river Maigue running through it from south to north, washing the base of the Manor as well as the massive ruin of Desmond Castle, and it runs out of the park through the quaintest-looking bridge we ever saw. This bridge forms part of the great picture of Desmond Castle; the arches are very irregular in size, the distances between them most peculiar, and the picture is completed by huge masses of Ivy projecting as only can be seen in the south of Ireland. This bridge is supposed to have been built by Gerald, fifth Earl of Kildare, about 1390; the bridge blends, as it were, with the Ivy-clad walls of Desmond Castle, and when the group is seen reflected in the lake-like river—for lake-like it is here—it is the most artistic combination we ever saw.

The walls and outlines of Desmond Castle are in substantial order; the keep is accessible by stairs, and from the summit is a rich view of a highly fertile country round. The date of the building of the castle is not known. The style indicates



Adare Abbey.

that it belongs to the close of the twelfth century. It is known to have belonged to the Earls of Desmond for half a century, then it passed to the Earls of Kildare, or Geraldines, and was dismantled by Cromwell in 1657. This great ruin consists of two wards, an inner and outer. There are three gateways to the outer ward; the two principal ones are in square towers in the west and north walls, and were defended by portcullises. The moats are in good order, especially that surrounding the inner ward and keep, and the *Nymphaea alba*, flowering so abundantly, is a very striking object. In the outer ward are some fine trees of Beech and Horse Chestnut, which give a peculiar freshness and repose in the mass of ruins, which is well expressed in the lines of Gerald Griffin:—

"Peaceful it stands, the mighty pile,
By many a heart's blood once defended,
Yet silent now as cloistered aisle,
Where rung the sounds of banquet splendour;
Age holds its undivided state
Where youth and beauty once were cherished,
And leverets pass the wardless gate
Where heroes once essayed and perished."

Leaving Desmond by the carriage drive, on our left appears another group of ruins. This was the old parish church of Adare and burying-ground; here the Ivy is growing in extraordinary masses, and the stems quite tree-like in size. In 1807 the old church of the Augustinian Abbey was given by the then Earl of Dunraven for a Protestant place of worship, and the good Earl fitted-up the church substantially. Behind the

burying-ground is an old orchard which belonged to a turnpike, a place of tribute happily now unknown in Ireland. The late Earl had this ground effectively planted with Coniferous trees some twelve years ago. Already these trees are striking objects, the most noticeable are *Pinus insignis*, *Pinus Laricio*, and *Cupressus macrocarpa*; several varieties of *Piceas* and the *Deodars* are also very flourishing. Near this we observe some groups of trees very skilfully planted and making rapid growth. These trees have only been planted a few years. The groups consist of *Wellingtonias*, *Deodars*, *Cupressus macrocarpa*, and *Silver Poplars*, and farther on by the side of the Limerick-road are well-arranged groups of the Austrian Pine. In a few years this planting will wonderfully change and improve this side of the park. It may here be stated that all the Coniferous trees planted at Adare for the past twelve years have been grouped for ultimate effect.

On the edge of the park, near where these young trees are, is a meeting-house belonging to the "Palatines," who settled at Adare in 1777. In our time the name of "Palatine" is barely understood; it may interest some to hear a few particulars as to their settlement in Limerick. We need not refer to their being driven out of France by Louis XIV., and their arrival in Ireland, where a large number of them settled at Rath Keale, some six miles south of Adare, on the property of Lord Southwell; they were embodied in the free yeomanry of the country under the name of "True Blues," or German Fusileers, and were commanded by a Captain Brown. Each

man, woman, and child was given eight acres of land. They were introduced to Adare by Colonel Quin and his successor, Sir Richard Quin, first Earl of Dunraven.

We now pass along the Limerick carriage-drive until we reach the spot where the original entrance-gate was, and stand before the magnificent pile of the Franciscan abbey. This ruin is in excellent preservation, and so skilfully were the necessary repairs done for the preservation of this fine abbey, that it would require an expert to be able to state that the building is not as it stood four centuries ago. This abbey was partly built by Thomas Earl of Kildare, in 1464, in honour of St. Michael. The Earl of Kildare only erected the church part and a fourth part of the cloister. He also bestowed a bell of great value, and two silver chalices. His Countess (who was a daughter of James Earl of Desmond), laid the foundation stone of this abbey. James Earl of Desmond was attainted in a parliament held at Drogheda, and executed "for alliance and fosterage with the Irish," in

1467. This abbey was added to by many devout Irishmen, among whom we find the names O'Sullivan, O'Dea, Fitzmaurice, Fitzgibbon, and John, son of the last-named Earl of Desmond, all of whom were buried within the walls. During the wars of the great Earl of Desmond the friars were ejected from the abbey, and when Queen Elizabeth bestowed it on a soldier of fortune named Wallop, he allowed it to go to ruin. The abbey, however, became again tenanted by monks, but during the civil wars in the time of Charles I. it was said to have been burned by an Earl of Inchiquin, called "Murragh of the Conflagrations." The gateway on the south side is the only one standing, and is in tolerably good order. The ruins of the "old mill" are quite distinct, and in the garth stands a venerable Yew tree of large size. Close to the east end of this abbey there is a stump of an Ash tree, under which John Wesley is said to have preached to the Palatines, and the Wesleyans continue to hold an annual meeting on the same spot. This ruin covers about two acres of ground.

IXORAS.

This popular genus of Rubiaceæ includes amongst its members some of the most gorgeous plants which serve to ornament our stoves, and contributes some of the finest subjects for the decoration of the exhibition tent which it is possible to set up. A considerable number of species are now in cultivation, all of which I believe are natives of the East Indies and the islands of the Indian Archipelago; but in addition, the ranks have been considerably augmented by the production of numerous varieties through the skill of the hybridiser in our gardens. It is not my intention to take the whole genus in detail, beautiful though they undoubtedly are, but merely to call attention to the two fine varieties which I am enabled to figure through the kindness of Mr. B. S. Williams, of Upper Holloway, who distributed them to the public in the spring of 1871.

Ixora Williamsii (fig. 1), is an especial favourite with me, and is, I think, destined to become a universal favourite. It is of free habit; the foliage is bold and stout in texture; the trusses are very large, the colour most pleasing, and they are produced in great profusion even on small plants. I have now young plants of this variety which are only 8 inches high, and they are bearing one and two trusses of bloom upwards of 6 inches in diameter, whilst the individual flowers are upwards of 2 inches long and of a charming shade of reddish salmon. Every person who sees this variety is delighted with it, and I have no doubt that it will become a favourite exhibition plant.

The next variety, *Prince of Orange* (fig. 2), is an equally profuse bloomer with the one dedicated to Mr. Williams, flow-

ering when quite as young; indeed I have this kind with two and three trusses of bloom on plants not much over 7 inches high. This very floriferous habit, combined with the distinct colour, which is rich orange red, with a tinge of violet on the

limb, renders it at once distinct and beautiful; at the same time it is but fair to add that the trusses are not quite so large as in fig. 1, yet they measure some 4 inches in diameter even upon these small plants.

All *Ixoras* delight in strong heat and a humid atmosphere; but the notion which some have that they will not grow well without being plunged in bottom heat is quite erroneous. I find my plants thrive well in good peat and fibrous loam with a little sand added, using about two parts of the peat to one of loam. The drainage should be kept clear, as they delight in an abundant supply of water. If wanted for blooming at the end of May and beginning of June, I like to prune and start them early in January, whilst those for later flowering may be left until about the middle of March; on the contrary, those plants which



Fig. 1, *Ixora Williamsii*.

Fig. 2, *Ixora Prince of Orange*.

are not wanted to flower at any stated time, but the flowers of which are welcome whenever they appear, will need but a very limited period of rest.

Ixoras are peculiarly liable to the attacks of mealy bug and thrips; the former becomes a pest, and presents a very unsightly appearance if allowed to get into the trusses of bloom—in fact, when the flowers have expanded it is scarcely possible to clean them out without injuring the appearance of the truss. A little care and attention will, however, keep off this pest of

the stove, the best and easiest remedy I have found being an occasional application of the "Abyssinian Mixture." When plants are large it is somewhat difficult to dip them, but the result will warrant any trouble taken, whilst in the case of young plants nothing is more easy.—EXPERTO CREDE.

HEATING SMALL GREENHOUSES.

ALL things considered, there is no such easy and economical mode of heating a small greenhouse, say 20 to 30 feet by 10 feet, as by an iron stove, because it can be so easily moved out of the way from April to the end of October. The numerous failures of which we hear are chiefly owing to the stove being made too hot, and very hot iron will ever be hurtful to plants, because the air round the stove is burned and deprived of its oxygen. This, again, is the result of having a single iron barrel stove with the firebox abutting against the side iron, and not only in plant houses but in workrooms I have seen the iron opposite the firebox red hot. No wonder if plants suffer, and young women and lads faint and get knocked up. No such single-barrel iron stove ought ever to be placed in a plant house. Either the stove should be wide enough—say from 12 to 15 inches square or in diameter, so as to have an 8 or 9-inch firebox standing in the centre, with a space all round it so as not to abut on the sides, or there should be a firebox made of the best firebrick. In either case the iron at the sides opposite the fire never becomes much warmer than the rest of the stove.

For several seasons I kept the frost out of an ornamental house, a lean-to, some 50 feet long, 10 feet wide, front glass 12 feet high, with a hipped roof considerably higher, by a cylindrical iron stove, with the fireplace lined with firebrick, and the plants near the stove suffered nothing from the proximity. Of course, I prefer hot water, and have it, but there is no comparison between the two systems as regards expense. The purpose for which I chiefly write this is to guard those who have a little house against getting a single-barrel iron stove with the fireplace abutting against the sides, as these will be sure to become red hot. Two years ago I saw such a small rusty stove some 18 inches high, and 7 inches in diameter, in a small house in the shape of a balcony from the third floor, and even that small stove gave heat enough, but it was burning, parching, destroying heat. For about double the money a stove with the fireplace lined was procured, and there was no more parching and burning. For a house such as I have referred to, instead of having a trumpery stove, it would be the truest economy to purchase at once, at the expense of £3 to £4, a good article, offering the conditions to which I have referred. But for the ease in moving, I would prefer a brick stove to an iron one.

I am the more anxious on this point because, after all that has been said on the subject, people will persist in getting a thin paltry iron stove with the fuel abutting against the sides. I say emphatically that no stove where the burning fuel comes in direct contact with the iron sides is fit to go into a house of plants. This matter clearly understood, I have no doubt that many thousands of small houses would be heated comfortably for a mere trifle in winter, that now are little better than a desert in the winter months. For small places I honestly believe that no other mode of heating will be so economical, and a little practice makes it cleanly and effective.—R. FISHER.

A PLEA FOR GARDENERS WHO HAVE CHILDREN.

I AM one of those gardeners, and I feel quite justified in making an appeal to the general readers of THE JOURNAL OF HORTICULTURE to try and remove the unjust punishment which we who have children have for a long time suffered. How can anyone with common sense expect that if a young healthy couple marry they are never to have a family? It is true there are several who do not have any, but they are seldom happy or contented; they have no idea of the comforts derived from children, and as years pass on and they become old, what can be more distressing than to see one of either sex, whether rich or poor, left without son or daughter, perhaps on a death-bed, with no one to whisper comfort?

I am sure that many good gardeners are passed by because of their family, and in many cases they are the best men; they are more thoughtful and more persevering—in fact, circumstances compel them to be so. It is a very hard case when a

gardener with a family leaves one situation, and, hearing of another going, makes application for it, and finds because he has a family he will not do. Scarcely a week passes but we see an advertisement with the words, "No incumbrance." It is very much like the advertisements that may sometimes be seen in the daily newspapers—viz., "No Irish need apply."

Then what is a family man to do? The best thing for him is to emigrate to some newer country, where his family instead of being a hindrance to him will be a blessing; but in my opinion it is a disgrace in a country like England to lose a man with a good character and good abilities, and who is also able to do all sorts of work.

I am happy to be able to say there are a few kind and thoughtful gentlemen yet who do not despise us, mostly fathers themselves, who know what it is to bring up a family—know the anxiety, the thought, the trouble, and with all this there is a pleasure that none but a parent can enjoy. Again, I am sure that in boys whose fathers are gardeners, and who are sometimes allowed to visit the potting-shed—in them we generally find our best gardeners. The boy generally learns to crock pots, he learns all the different sizes of pots, the names of all garden tools, the names of the different soils, and, besides, he learns the names of many plants, and when it is time for him to leave school (provided he take to the profession) he is already conversant with all the minor details of an ordinary garden.

I have been a constant reader of the Journal for the last ten years, and I do not remember anyone writing much on this subject during that time. It is true our friend "WILSHIRE RECTOR" did write a little on the death of poor Mr. Chitty, but I hope that he, or some one as able, will take our case in hand, for we feel at present something like a very large Dahlia without a stake.—JAMES R. POCOCK, Gardener to R. N. Dale, Esq., Prince's Park, Liverpool.

GREEN ROSES.

I HAVE no doubt many of your readers will feel much interested with the record and accompanying accurate illustration of the green Rose given at page 132 of the Journal. I remember taking note of one which was, and I believe is still, growing against the ornamental brick wall which encloses and separates the herbaceous department from the other botanical pleasure grounds in the Royal Gardens, Kew. There, in rather a northern position, in company with other miscellaneous climbers, it was growing luxuriantly, and producing abundance of blooms quite as green as the foliage. From this it may be inferred that there is nothing peculiar in its cultivation. As in the engraving, the petals were of ragged outline, the entire bloom being deficient of that desirable symmetrical form characteristic of the queen of flowers. The unattractiveness of the bloom, or rather the want of a contrasting colour, will not secure its extensive use, as, unless when closely inspected, the bloom is scarcely distinguishable from the foliage; nevertheless, its singular distinctiveness from all others will gain for it a place in the most unpretentious collection—that is, when it becomes more plentiful. At present I believe it to be as rare as it is curious.—J. M. C.

HEATING BY HOT WATER AND BY HOT AIR.

I VENTURE again to trouble you, this time with some notice of the remarks made by your correspondent, "J. C. M.," and by your reporter. It seems to me that dogmatic remarks such as those made by "J. C. M.," at page 111, do not aid in deciding the questions raised. I do not see how "J. C. M.'s" veto acquires force because some one once hatched red spider by Polmaise when he was an apprentice. My plan is not Polmaise.

For the remarks of your reporter I am much obliged. I think, nay, I am sure, that many of the reasons he gives for his opinions are wrong; but reasons are given, and candidly and courteously stated. I hope to be able to point out, without giving offence, where I think that his mistakes lie. The opinions of my plan which he holds must have been formed after a cursory inspection only, at least, so far as respects the stove; for, far from "the iron being heated through a thickness of brick," the gaseous products of combustion play directly on the interior surface of the gilled iron dome, if I may so call it. The mass of ignited fuel is below, in a firebox of masonry. This box of masonry is by some, especially by iron-founders, objected to as cumbersome; but as it prevents contact of the fuel with metal, and affords a reservoir of heat in cases of careless stoking, I cannot dispense with it. Just before writing thus about the stove, your reporter makes a broad assertion, "That

it is impossible to get cold outer air completely saturated with moisture by means of evaporating-pans." Now, if he speaks of evaporating-pans such as are used by me, I can but answer by a shrug such as Galileo must have given when he was told that the earth ought not to, and did not, and could not, move round the sun. I, therefore, only shrug, and ask my wet and dry bulb thermometer what it thinks of that story.

But I have a difficulty in finding common ground of argument with your reporter, for his notions of the laws which relate to heat and heated fluids seem to me to be, to say the least, inaccurate. For instance, I stated that of heat produced from fuel a certain portion, much or little as the case might be, must be used to draw the air through the fuel, and that the heat necessary for this purpose could not be made available for the further purpose of heating. This is a "dictum" your reporter "cannot agree with." Yet it is as self-evident as the dictum that two and two cannot make five, and has been so self-evident ever since folk agreed that they could not eat their cakes and have them.

So, again, your reporter says, "There is no real economy of fuel in a tall shaft, it only insures more perfect combustion," and then he gives some reasons which are exquisitely wrong. The true reason why air rises through (let us say), a 6-foot chimney, is because the 6-foot air-column within the chimney is lighter, say by 1 oz., than the 6-foot column outside it. It has been made this 1 oz. lighter by the consumption of the necessary quantity of fuel. If we raise the chimney to 12 feet, the difference between the weights of the outer and inner columns will be doubled; and if we wish the smoke to issue with no greater velocity than it did at first, we must burn only half the fuel. The half saved from draught uses is thus available for heating uses. To set all this out fully would take some time; but, even as Abernethy said, "Read my book," I would refer your reporter to a paper you were good enough to print in vol. i., new series, entitled, "What Causes a Draught." If your reporter can accept the explanation there given he will no longer say that "the rapidity of the rise of my hot-air current entirely depends on the amount of heat it extracts from the stove." On the contrary, he will find that I rely upon a shaft to induce temperate currents, instead of urging a stove to impel hot ones; and this shaft may be above or below the ground level, but if possible should be below.

I fear that I have already trespassed too much upon your space, but if I may continue I would say that my principle No. 1 is not a "truism," for many gardeners advocate imperfect glazing, and rejoice in their chinks. But while I denounce all such "fissures of imperfect structure," I am fully sensible of the need which they rudely supply. If nothing better could be offered we might well accept such orifices as a means of introducing fresh air. But if outer air is to be introduced, inner air must be expelled, and the question remains, Shall we expel the hottest or the coldest portion of it? If you depend on chinks or on top air the hottest is lost, by my system the coldest departs.

Your reporter speculates on the effect of a gale acting on the escape-orifices, but does not seem to have observed that these orifices are in duplicate, so that only those on the lee side need be opened. But if I sin in this point I sin in good company, for like remarks would apply to Mr. Taylor's very useful arrangement (exhibited in the gold-medal house), which received, as it deserved, your reporter's praise. Mr. Housman does not forget how rapidly air cools (odd, isn't that, when it is so difficult to warm?), for he points out how the vacuum produced by such condensation induces a swifter rush through the stove chamber, and so permits of fiercer firing on a fierce night. Nor has he forgotten to provide slides in the middle house, from which, if the surplus heat from the warmer houses is not sufficient, supplies from the air-canal may be turned on.

Space forbids me to treat of the laws relating to the radiation of heat, and to its conductivity. These laws are widely different, yet by many persons are confounded; but I must ask your reporter not to suppose that what he has said on these points is unanswerable because unanswered, and ask him also to accept an expression of thanks and good will.—EDWARD HOUSMAN, *Bromsgrove*.

WORK FOR THE WEEK.

KITCHEN GARDEN.

REMOVE decaying leaves from Brussels Sprouts, Broccoli, and other crops of the Cabbage tribe, and trench them into the soil in some spare part of the garden set apart for early spring crops. Plant *Endive* in sheltered corners, where it can be covered in severe weather with fern, dry litter, or mats. Sow *Cauliflowers* on a warm border, in case the early sowings prove too forward. Sow and plant *Lettuces*. *Onions* are not generally so sound as usual, and are likely to keep badly. They will, therefore, require to be spread out thinly and frequently looked over. Thin *Winter Spinach*; vacancies may be

filled-up by transplanting, and by this means also the crop of *Lettuce-leaved Spinach* may be extended.

FRUIT GARDEN.

PARTICULAR attention is now required to be directed to the gathering of the earliest varieties of Apples and Pears. As a rule, the latter may be considered fit when the stalk parts from the spur by merely raising the fruit to a horizontal position without pulling. The *Flemish Beauty* is, however, an exception, and must be gathered whilst it still retains considerable hold, otherwise it becomes dry and musky instead of being melting and sweet. The particular tinge of colour which Peaches and Nectarines acquire when ripe should be particularly observed, in order that they may not be touched till they readily part from the tree. Funnel-shaped gatherers lined with velvet have been recommended, but the hand is far preferable if applied so as to grasp the fruit with gentle and equal pressure on five points of contact. In some cases the flavour of these fruits will be improved if they be not used till the day after they are gathered, but they must be laid softly on cloth or on cotton covered with tissue paper.

FLOWER GARDEN.

As the numerous varieties of *Verbenas* are now in bloom, the best kinds should be selected for bedding-out next year. The particular habit and colour of each should be noticed in order to select desirable varieties for bedding-out next year. The same precaution and observation hold good in regard to *Petunias*, *Fuchsias*, and *Pelargoniums* in order to ensure good arrangement at planting-out time next season. Where there are conveniences for storing them in winter, as many kinds should be grown as possible for planting on rockwork, in borders, &c., to produce variety; but in clumps nothing but first-rate kinds should be planted. Auriculas must be sheltered from bright sunshine as well as excessive rain, keeping the pots free from weeds, and occasionally stirring the surface of the soil with a blunt stick. It is now a good time to procure plants from a distance, that they may be established before winter. Layers of *Carnations* and *Picotees* when sufficiently rooted may be taken off the stools and potted in pint pots; the soil should be of a sandy texture without any manure being mixed with it, in order to prevent the plants assuming too gross a habit, which is prejudicial to their health during winter. Pinks should be planted in their blooming beds without delay. Occasionally they are potted and sheltered in a similar manner to the *Carnation*, and then turned out with the ball entire in the spring; where there is the necessary convenience this is best. Pansies may now be divided and planted out. Cuttings of the weakest shoots now strike root easily and make better plants than those of more robust habit. Dahlias should have all malformed flowers removed as soon as perceived, and where necessary some of the branches thinned-out. Trap earwigs in every possible way, and keep the ground clean round the plants.

GREENHOUSE AND CONSERVATORY.

CLIMBERS will always require attention to keep the shoots in their proper places. Take care, in training, that that part of the trellis or stakes nearest the bottom does not become bare of flowering shoots, as the beauty of these plants depends on their being clothed with foliage and flowers from the rim of the pot. Pot-off seedling *Calceolarias* in small pots, and keep them close in a frame for a few days. Put in cuttings of all the best kinds, which will readily strike in a common frame. Lilies from Japan will now be in great beauty; supply them bountifully with water, and shade the flowers from powerful sunshine to prolong their beauty. Pay attention now to *Chrysanthemums*; they must not be stopped later than this to produce fine heads of bloom; a little liquid manure will assist them, let it be applied twice a-week if your desire is fine plants with large flowers. The plants out of doors should now be in readiness for housing whenever a change in the weather is apparent. The season is now so far advanced with a continuance of summer-like weather, that we should be prepared for the reverse. See that every plant is duly staked and drained, the pot or tub it may be growing in clean-washed, the surface of the soil open and free from weeds or moss, and if any indication is apparent of slugs or worms give a root-watering with lime water. See that thorough cleanliness and order is established throughout, and that each plant is so placed as to admit of its receiving its due share of light and air. Keep these structures open night and day after the plants are placed, only reducing the ventilation when unfavourable weather occurs, and even then with moderation.

and caution if sturdiness and blooming in perfection at the proper season be aimed at. Water must now be applied with more caution in proportion to the difference in the supply of natural light and other changes in the atmosphere. The Orange trees should now be placed in their winter quarters, the drainage thoroughly examined, the roots top-dressed if required, and a good fumigation of tobacco smoke applied.

STOVE.

The plants in this structure should now be neatly arranged, and both heat and humidity diminished by degrees as we get less solar light. Top-dress any plants that require it, and see well to the drainage of all plants, particularly established plants that have not been repotted for a considerable time. As the nights become cold a little fire must be given, not with any intention to promote growth, but to assist in ripening the succulent wood. As all liberally-potted specimens have made unusual progress, it now becomes a serious matter with the cultivator how to sufficiently harden their growth in order to make it stand the winter. Admit as much sunlight as possible, and give air abundantly when the temperature exceeds 80°.

PITS AND FRAMES.

Continue to pot-off such cuttings as are rooted, place them in a cold pit or frame for a few days in order that they may become established in the pots, when they should be removed to a sheltered situation to harden. Keep every pit or frame well filled, as no time should be lost in securing a sufficient stock for next year. One of the first things claiming attention at the present time is potting bulbs, as much of the success of early forcing depends upon early potting. Respecting the kinds, I will only remark, the common and cheap single varieties are the best, and it is much better to have a dozen or two of the same kind than to provide a collection, many of which will not force. I never saw bulbs in finer condition than they are this season. They are not only large, but sound and perfectly matured. Pinks and Violets must also be looked to, the latter both for potting and blooming planted out in the frame or pit. Take them up carefully, breaking the roots as little as possible, and pot them in 32's or 24's, in a mixture of good loam and leaf mould. Place them in a shady situation until they make fresh roots; or a frame may be put over them if it can be spared. After they are rooted expose them as much as possible; as the only thing to prevent their damping-off in the winter and to make them flower abundantly, get the shoots thoroughly ripened. Such Violets as are not wanted for forcing should be planted out at the foot of a south wall, where they will bloom early in the spring. Mignonette should be thinned in due season. Ten-week Stocks should be sown for pricking into pots by the end of next month. Cinerarias should now be repotted, and *Caleolarias* parted, placed in 3-inch pots, and plunged in some cinder ashes in a cold pit or frame close to the glass.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

HOING, planting where there was room, looking after young crops, and earthing-up Celery have been our principal work. We have also picked rather closely Scarlet Runners and Dwarf Kidney Beans, even though we did not want them particularly, as we know that one pod allowed to seed will have a greater tendency to distress the plant than twenty pods gathered when crisp and young. The closer the gatherings the more will there be to gather. We have known cottagers often sacrifice scores of fine dishes of Beans in order to save a few seeds; in other words, to secure a shilling's worth of seeds they sacrificed from ten to twenty times that value of rich nutritive vegetables. Our advice is, Except for a few seeds, gather closely, and never allow a pod to grow old. If the pods do not break easily across they are too old for use.

FRUIT DEPARTMENT.

We have only been acting in routine. Two things, however, are worthy of consideration. First, we are perfectly foiled in endeavouring to find something like a clue to the reason why, even now, some trees are laden with fruit and other trees have not a single fruit on them. We had the idea years ago that some kinds of hardy fruit stood better than others; but the very best to stand in our old memoranda are really the very worst this season; so that we confess to be perfectly at sea on the matter. However, a feeling of ignorance is one advantage, in so far as it makes us anxious to pick up even stray leaflets of intelligence. In this direction there is a wide

field for observation well worth the attention of our younger brethren.

The other matter concerns Grapes in greenhouse vineries. Many of the varieties would ripen perfectly without any help; still, to have Grapes well ripened, a little fire heat is of great advantage, and if it is desired to keep the Grapes some time, the more thoroughly they are ripened in September the better they will keep, and for this thorough ripening moderate firing at the end of August and during the first fortnight of September is worth more than any amount of firing in October. Many would enjoy a bunch of Grapes in the first months of winter all the better if they gave a little fire heat to help them in the early autumn months. Keep in mind that Grapes well ripened in September will keep better and longer than those ripened in October or later.

ORNAMENTAL DEPARTMENT.

The heavy rains have given us the trouble of picking over our beds again, as many fine corymbs of bloom were blackened, and spoiled the effect of the fresh ones and those just opening. A few days of moist weather make such a change, that we hope to live long enough to see small flower gardens covered with glass, so that the rains shall not rob them of their beauty. We have known many seasons when we did not require to pick leaves from scarlet Geraniums. We are obliged to do so pretty freely now to give the flower-trusses due prominence. The damp weather has just suited *Caleolarias*; they are still splendid, and showing innumerable buds. We wish our readers would send us their observations on the hints of the other week. We are convinced at present that free blooming in the autumn depends on continuous free growth and flowering in summer; but we are unwilling that such an idea should be received generally without more corroboration.—R. F.

TO CORRESPONDENTS.

N.B.—Many questions must remain unanswered until next week.

BOOKS (R. J.).—You can have the "Cottage Gardeners' Dictionary" free by post from our office if you enclose 7s. 2d. with your address.

FERN CASE (F. B. S.).—One or two makers of plant cases advertise in our columns; any one of them could supply you.

BENEFIT SOCIETY (A Constant Reader).—We cannot give you the information.

ARNOTT'S STOVE (J. C. R.).—See an article in another page. You will also find the pros and cons in No. 354, January 8th, 1868.

SUMMER AND WINTER RAPE (Y. N. T.).—Very few genera are in more confusion in their nomenclature than the genus *Brassica*. We believe that practically any one species of Rape may be sown so as to be ready for use at any season of the year. However, the Rape or Colsat of our winter provision is the *Brassica Napus*. The species known as Summer Rape, Navette d'Été of the French, and Kohl Repe of the Germans, is *Brassica peccora*.

TOMATO (W. S.).—It was named on page 138, Orangefield Tomato.

CATERPILLARS ON CAULIFLOWERS (A Subscriber).—Dusting over them white hellebore powder destroys them; but hand-picking is the remedy we employ. A woman will clear a large bed in a very short time.

WRES FOR TRAINING (F. H.).—From post to post, and an inch from the boards.

AMERICAN GRAPES (A. W.).—If of merit they will be soon introduced here, but at present we know of not one equal to those we usually cultivate.

WHITE-FLOWERING RUNNER KIDNEY BEAN (J. T.).—It is quite common.

WINTERING ALTERNANTHERA MAGNIFICA (R. J.).—You can winter this safely in a greenhouse along with the Geraniums and other bedding plants, taking up the plants early in October, potting, and placing them in a light airy position, giving no more water than is needful to keep them fresh.

LILIU SPECIOSUM NOT FLOWERING (M. F.).—We presume the cause is the weakness of the bulbs. We should advise you to set the pots out of doors in an open but warm situation, and when the stems turn yellow repot them. After turning the plants out of the pot remove the soil down to the crown of the bulbs, cut off the stems just above the bulb, and remove all the soil that comes away freely from the roots, if there are any; if there are none, clear away the whole of the soil. Drain the pots well, and place about an inch of the rougher parts of the following compost over the drainage—viz., two parts light fibrous loam, one part sandy peat, and one part leaf soil, with one-sixth of silver sand. Fill the pots to two-thirds of their depth, introduce the bulbs, placing a little silver sand under them, and then add soil so as to cover them about half an inch deep. Place the pots in a house or frame secure from frost, give water as required to keep the soil moist; and in spring, when the shoots are a few inches higher than the rims of the pots, top-dress with the compost named, filling up the pots nearly level with the rim, but leaving a space for watering. Keep the plants clear of insects, and water liberally, but not so excessively as to saturate the soil. *Lilium bulbiferum grandifolium* will succeed under the same treatment. Our "Greenhouses," 6d., or free by post, 7d.; or "In-door Gardening," 1s. 6d., free by post 1s. 7d., will suit you. Either may be had from our office if you send stamps with your address.

GRAPES WITHERING (U. V. A.).—We suppose the Grapes are shanking, or the footstalks of the berries dry up, and the berries, as a consequence, shrivel. It results from an insufficient supply of sap, generally caused by the roots being inactive from being in a wet and cold border. There is no remedy but to provide a drier and consequently warmer soil, and allow a good amount of

foliage, so as to encourage free root action. Do not resort to excessive removals of the laterals, but stop or remove them at short intervals.

CUTTING WALL IVY (W. B.).—If your Ivy has not been cut for six years, it should be cut-in closely from the middle to the end of next April. It is now too late to cut Ivy, but you may remove any irregularities, deferring the close-cutting with the shears until April.

DRESSING AND RIDGING HEAVY SOIL (Idem).—Ashes, lime riddings, sand, leaf soil, or anything not so rough as to cause trouble in the working of the ground, may be advantageously applied, and we should add the manure you propose applying, ridging up roughly for the winter. The first dry weather in February or March we should give a dressing of lime, and then turn the ground over with a fork, breaking the clods up well.

PLANTS FOR BACK WALL OF CONSERVATORY (G. H.).—We presume you have a border, and in that case we advise you to have *Habrothamnus fasciculatus* or *elegans*, both fine winter-flowering plants. *Lapageria rosea* will also suit if not too much shaded, and so will *Tacsonia Van-Voikemii*. *Luculia gratissima* is also good, and autumn and winter-flowering, but it is of slow growth. We recommend the first named.

CLIANTHUS DAMPIERI SICKLY (C. W.).—The plants are probably suffering from cold and damp. Remove them at once to the greenhouse, giving them a light airy position, and not watering more than is sufficient to keep the soil moist. Pot them in a compost of light turfy loam two parts, and one part sandy peat, with a sixth part each of silver sand, and charcoal in lumps between the size of peas and hazel nuts. In their early stages a temperature of 45° to 50° is most suitable, and in summer one of from 60° to 75°. Harden them off when well established, and remove them to the greenhouse.

PEAT FOR BEDDING PLANTS (F. L.).—The peat of which you sent a sample is to all appearances good, and may be mixed with the soil for bedding—one part to two of good loam, but it is only as an addition to loam of a heavy nature that we should advise its adoption as an ingredient of the compost for bedding plants. Two parts loam and one part leaf soil are preferable, adding sand liberally.

SEVERAL GERANIUMS IN A POT (E. M. J.).—You may place several plants in a pot as you propose, and such kinds as *Bijou* and *Flower of the Spring* will do as well in that way as other kinds. It is not, however, nearly so good a plan as potting each separately. It is desirable to remove the old leaves when potting, as they only damp or wither on the plants if left. Cut away any old, long, and weak shoots, but leave the young and stubby ones. We do not advise pruning to any great extent at the time of potting, especially as you do not appear to be in a position to encourage fresh growth by placing the plants in a house with gentle heat. After potting, the plants should be placed under glass, or in a position where they can be protected from heavy rains; and though the shelter you think of giving them under the trees would be all that would be required to save them from frost until the end of October, we fear the soil would become very wet, especially if the autumn be rainy. We should choose a warm open situation, set the pots on coal ashes, and protect them from heavy rain or frost by mats or other coverings. Place the plants under glass as soon as possible after potting.

VINE LEAVES BROWNED (Leyton).—The leaf you sent showed evidence of the attacks of red spider, but there was none on it. Your only remedy will be to coat the pipes whilst hot with flowers of sulphur brought to the consistency of paint with a solution of 5 ozs. of soft soap to a gallon of water. The shrivelling of the Grapes probably arises from shanking, to which the Frontignan varieties are subject. We know of no remedy except securing a well-drained border, and encouraging more foliage on the Vines. It would benefit the Vine to cut the Grapes for making wine.

HEATING A CHAMBERED BORDER (C.).—You should have the soil over the crown of the arches in the border from 20 to 24 inches in depth. Even then the flow and return pipe in the arches will disappoint you, unless you either cover the surface of the border with litter, or, better still, place sashes over the border. We think much may be done with chambered borders, heated from beneath, but only when the heat is kept there. The angle of 45° is very good for early forcing, but we consider a curvilinear roof better still, as the light falls at so many more angles.

HEATING A GLAZED VERANDAH (M. L. Griffiths).—For such a small place (11 feet, by 4 feet, by 9 feet), we should have a strong jet of gas connected with a 1-inch pipe all round, so that you could have the heat without the fumes. A more economical mode would be to take the gas into the small narrow house, and burn it in a small iron stove, but with a half-inch pipe at the top to carry off the products of combustion. We know something of coal gas to our sorrow, and some people are unwise enough to have it in plant houses to give light at night, but in every case the results are ruinous where means are not adopted to insure the burned gas having a free outlet.

REMOVING ROSES (Alpha).—Cut round their roots at once about a foot from each stem; and you may remove them in the last week of this or first week of next month.

TRAINING VINES (An Old Subscriber).—In your small house, 14 feet wide, you have room for five rods, trained up 2 feet 9 inches apart, and 1 foot 6 inches from each end, which is as close as they should be to each other. We do not see in what way you can train any more rods, so as to expose the leaves to the light. It is a mistake to crowd the roof with leaves, and it is immaterial whether you train up the rods under or between the rafters.

STOPPING SHOOTS OF WALL ROSES (Peak of Derby).—You are right in stopping the strongest shoots of *Gloire de Dijon* to encourage side blooms, provided you do not cut much away. If the long shoots are trained-in to the wall they will flower eventually at the ends; but you will hasten the time of blooming if you pinch out the ends of the long shoots, though the Rose will not cover the wall so quickly.

IRON SUPPORTERS FOR ROSES (H. M.).—If iron arches and iron supports for standard Roses are not painted they are apt to injure Roses by rust where they are tied. Iron rust, however, will not produce the spot on the leaf, and your Roses are most probably suffering from black mildew or orange fungus, which is very likely caused by poverty of soil.

BIRMINGHAM BOILERS (E. & Co.).—Only the upright tubulars have hitherto been described. The horizontal tubular, and Deard's centrifugal will appear in our next number. If you send woodcut it will be inserted. (*Other Inquirers*).—The notice of the boilers at the Birmingham Show will be continued in our next number. Our reporter is not classifying them into those entered for competition and those merely sent as exhibits, but has divided them into upright tubulars, of which there were three—Weeks's duplex, Harlow's, and Clarke's; horizontal tubulars, of which there were also three—Messenger's, Dennis's, and Truss's; Deard's centrifugal, and modifications of

the saddle, which include the tank and conical boilers, five varieties of which were entered for competition. The whole number of competitors was—Harlow, upright tubular; Dennis, horizontal tubular; Deard, centrifugal pipe; Mee, double saddle; Cannell, circulator; Lumby, Excelsior; Hartley & Sugden, saddle with extended water way; Green, saddle boiler with shelves. Our next notice will include the horizontal tubulars and Deard's centrifugal; the last notice the saddle and its modifications, both those competing and those only exhibited. Any boiler-makers exhibiting who wish to send descriptions and illustrations are at liberty to do so.

MELON WITH SCARLET AND GREEN-FLESHED FRUIT (C. M. McC.).—We have not seen nor heard of scarlet and green-fleshed Melons being produced on the same plant. It is a curious occurrence.

ERADICATING NETTLES (L. E. S.).—These being surface-rooting, or having their crowns and creeping stems near the surface, the best plan is to take them up, dig the ground, and after letting it dry for a short time beat the soil from the tufts, fork over the ground, and remove every part of the Nettles. Any which may survive the operation should be forked up as soon as they are perceived, and in this way you will soon clear the ground. Salt will destroy them, but it requires to be laid on in such quantity as to destroy everything in addition to the Nettles. For the disease in the sheep, consult a veterinary surgeon.

CEREUS GRANDIFLORUS NOT FLOWERING (M. A. M.).—We think your plant has not gained sufficient strength for flowering. We advise you to plant it out in a border 18 inches wide and 2 feet deep, composed of half fibrous loam, one-fourth old lime rubbish, and one-fourth broken bricks and charcoal well mixed. The border should be well drained. The plant may be planted out now, and should be kept dry until March, when it will begin to grow. It should have plenty of moisture until growth ceases, then gradually withhold water up to the end of September, after which keep it quite dry till March. The plant should be trained on a strong iron trellis fixed against a wall. If the wall has a south exposure, and the plant is not much shaded by climbers on the roof, it should flower. It requires to be grown in the stove.

GERANIUM LEAVES CATERPILLAR-EATEN (Walsall).—The leaves have been eaten by a caterpillar, probably the bright green one so common this season. We do not know of a better remedy than examining the plants well, especially the under sides of the leaves, and destroying them. This is a tedious but sure mode. You may also destroy them by sprinkling the plants overhead through a rose watering pot with water to which an ounce of white hellebore powder has been added to every gallon. The "Cottage Gardeners' Dictionary" will suit you. It may be had from our office for 6s. 6d., or free by post for 7s. 2d.

PEARS FOR A SOUTH WALL (A Subscriber).—Jargonelle, Beurré d'Amant, Gansel's Bergamot, Marie Louise, Van Mons Léon le Clerc, General Todtleben, Forelle, Glou Morceau, Joséphine de Malines, Winter Nelis, Bergamotte Espere, and Ne plus Meuris.

PLUMS FOR AN EAST WALL (Idem).—Belgian Purple, Transparent Gage, and Coe's Golden Drop—these are for dessert. If you want culinary sorts, Prince Englebert, Prince of Wales, and Victoria.

DESTROYING SLUGS (M. A.).—We find no dressing so effectual as lime. We dust the ground all over, as well as the plants, every three or four days if the weather is wet, or if dry once a week, and usually two or three dressings are sufficient to save most crops; but should the depredations continue, persevere in the lime-dustings, stirring the ground with a hoe previous to applying them. The lime should be quick, but reduced to a powder, as it will be after a few days' exposure in a shed. As your ground is so much infested with slugs we should now apply a dressing of lime at the rate of two hundred bushels per acre, placing it in small heaps, and directly it has fallen spread it evenly over the surface and then dig it in. This will in most cases prove effectual, but we should apply a dressing of nitrate of soda before putting in the crops, at the rate of 3 cwt. per acre, or 2 lbs. per rod, the ground having previously been dug over with a fork.

PANCRATIUM ILLYRICUM NOT GROWING (Idem).—This and *P. maritimum* only require a cool greenhouse, and will thrive well in a cold pit, or they may be planted in a warm situation out of doors, and be protected in severe weather. The plant may probably have lost its centre, but as it is rooting freely we think it will soon start into growth. Winter both in a cold frame or pit, plunging the pots in coal ashes, and protect in severe weather with mats. Water sparingly in winter, but when the plants are growing freely water abundantly. They will flower after they have gained sufficient strength.

ISMENE CALATHINUM NOT FLOWERING (Idem).—We should attribute this to the plant not having had a season of rest. Plant it out next April in rich, deep, sandy soil in front of a greenhouse, water it freely in dry weather, and in autumn take it up, and keep it dry during the winter. The bulbs are best potted in sandy soil. They should be kept safe from frost, and dry.

FIG (G. S.).—We do not recognise the name of the specimen.

INSECTS (F. C. B.).—Your caterpillar is that of the common Puss Moth (*Cerura Vinula*). It feeds upon various plants, and changes to a large white moth, beautifully marked with dark zigzag lines.—I. O. W.

NAMES OF PLANTS (Alpha).—3, *Lavandula Stoechas* (?) Specimens insufficient to name. (*J. B.*).—1, *Funkia subcordata*; 2, Apparently some *Eucomis*. (*J. R.*).—1, *Calluna vulgaris* fore-pleno; 2, *Erica multiflora* albiflora; 3, *Calluna vulgaris* albiflora; 4, *Erica carnea*; 5, *Rhododendron hirsutum*; 6, *Le-dum palustre*; 7, *Leiophyllum buxifolium*; 9, *Rhododendron ferrugineum*. (*A. S.*).—*Parnassia palustris*. (*Old Subscriber*).—1, *Cleome speciosissima* or *C. spinosa*; 2, *Arabis albidia* variegata; 3, A fasciated stem of some *Sedum*, probably *S. reflexum*. (*Kittie*).—*Saponaria officinalis* fl. pl.

POULTRY, BEE, AND PIGEON CHRONICLE.

POULTRY EXPERIENCE PURCHASED.

It is a long time since you received my last letter, for I have been waiting till I could make your readers all envious by describing how blushing honours had crowded thick and fast upon me; but —, well, I won't say a word about honours this time, for I want to know what has given two or three of my fowls diseased liver. I have just opened a fowl that has for the last week or two walked lame. Guessing it was afflicted with the disease that had before proved so fatal in my little poultry-yard,

I killed it, and, as I expected, its liver was three times its proper size; the kidneys also were very large, and both covered with, I might say entirely composed of, hard white lumps of all sizes, from small mustard seed to that of small beans. My chickens have all been healthy—remarkably so, and it is only three or four hens that have been affected this season, though last year I lost several, and it is the only disease I am troubled with.

Surely it cannot be from overfeeding, for I adhere strictly to Mr. Wright's advice, and keep my Brahmas ravenous, though I must admit if I err it will be on the side of humanity, for I have loved my pets so long and so well it is next to impossible I should neglect them. In a morning they are fed with a mixture of good wheat and barley, at noon with barleymeal made into a stiff paste, then just before roosting time, or rather bed time, a few handfuls of corn. They are always supplied with fresh water, have the run of a yard about 60 feet square on one side of the house, and are kindly permitted a large piece of the grass plat enclosed by 2-feet wire netting. Woe to that unhappy chicken which takes advantage of an accidental hole left in the netting to wander forth amongst fruit, flowers, and cabbages, all of which are the especial pride of their master, for then I have to listen to dreadful hints of their never again being permitted to enter their green pasture, and that, like a very ancient couple, they must for their sins be driven from the garden for ever. I could tell, if I durst, how cauliflowers, having their outside leaves sadly disfigured, are hastily cut for dinner, long before they have arrived at perfection, through somebody just leaving that blessed gate open; then that was not their fault, poor things.

Here I will say a word for my favourite Brahmas to those who, like myself, have not much room for poultry, but can appreciate for breakfast a really fresh egg with what I call a bloom on it (and a newly-laid Brahma egg has a bloom on it, just as well as your hothouse cucumber), and can enjoy an occasional chicken for dinner, whose precise age can be relied on. Some years back, before my experience was purchased, I made a point of bringing home every pretty-looking chicken I fancied to my little latticed run, quite irrespective of either age or breed, and then wondered why they looked so wretched, and persisted in "shuffling off;" but "experience teaches wisdom," and mine has taught me that it is of no use trying to keep in confinement those breeds that require a grass run. (To give this last clause its requisite importance it deserves printing in italics). For years I tried and could never succeed. They are restless and discontented, always flying into other people's gardens, to their disgust and my discomfort. Formal messages and letters from once kind and friendly neighbours, detailing in harsh terms their destructive exploits; visionary lawsuits for damages; laying away over walls where you durst not ask for the eggs; birds often missing altogether, retribution having come upon them suddenly while they were trespassing; sanguinary battles (very trying to a peaceful mind) between rivals, resulting in death or injury—all this I have endured till I determined never to keep fowls that brought me so much trouble, till I could give them an unlimited space to range in. Yonder are my pets, all so stately and substantial, so peaceable and happy, so docile and intelligent. Blessings for ever on the man who brought us Brahmas; may his account at his bankers never be small, and his shadow never be less! Then what eggs every morning! so large, so rich, and so many of them! What models of maternal devotion! Their sitting propensities I turn to good account by sitting every hen upon Ducks' eggs (I keep three to supply me with eggs), after I have hatched as many chicks as I require. I invariably get large broods, and plenty are glad to buy the ducklings at 6d. each when they come off, and by doing so I am a gainer, as the oftener they sit the more ducklings I have.

Before I close my rambling letter I will tell you how delighted I am with Mr. Wright's new book. To any who, like myself, know a little, and are anxious to know more, it is invaluable. I may thank him for many a "wrinkle;" *Nil desperandum*.—I. K. L.

MALMESBURY SHOW.—No. 1.

RECENTLY I drove to Malmesbury, as I heard there was a horticultural show to be held there. I do not state as yet what kind of a show, and scarcely knew to which part of "our Journal" to send the account, whether to ask for its insertion in the garden or poultry department; but as fowls, and even harmless Pigeons, are abominations in the sight of most gardeners, I elect the poultry part, for many lovers of fowls and Pigeons dearly love their garden. Hence if I chat of lawn and terrace, bedding plant and Fern, they, I know, will excuse me, and the gardeners' feathers remain unruffled. "The monks of old" had many a fair settlement in the district around Chippenham, Wilts. Three miles in one direction was Laycock Abbey, in the fine remains of which resides Mr. Fox Talbot, the inventor of photography. Two miles in another direction was Stanley Priory. Six miles in another was Baden Stoke Priory, now a farmhouse; and last, but by no means least, in another direction, nine miles distant, is Malmesbury Abbey, the remains of which are large and most interesting. The iron king, has, however, not always followed

the track of the ancient and venerable; and as no railway is nearer than the Great Western, and Chippenham station is distant, so, few comparatively, find their way to Malmesbury. It is off the rail and off the road. Soon, however, this will be remedied, and Malmesbury will no longer be out of the way.

Nine miles in the dust on a sultry day in August is something; and after passing to the left the village of Kingston St. Michael, where chatty John Aubrey was born, and also John Britton the antiquary, there is little to interest the traveller, the district being for the most part flat and unpleasing. A few coveys of partridges (large ones, to be thinned soon) ran and then flew before us. Ugly windmill-sail-like reaping machines were at work on each side of me; but I met no one, and no one overtook me for the first six miles. Then symptoms and signs of a fête day came on me by degrees—walkers in their holiday garb; a man walking first with his arms behind him, followed by a woman—that man is a husband; another man with a woman on his arm—that man is not a husband yet. Smart equipages are soon visible. Bright faces and bright ribbons and dresses are seen—I am so glad that women now wear pretty colours, blue especially, and that the long reign of drab and duster-coloured dresses is over. We reach the village of Corston, where many are on the stir. Girls, rosy and plump, and pale and thin, all with the unmistakable look of holiday folks, are on the road. Good looks, good humour, good spirits mark all the walkers and drivers, as if no strikes existed, no dear meat and dear coals were thought of. Happy forgetfulness or happy indifference! Life after all is only thought, and what we think at the time is reality.

"Life is but thought, so think I will
That youth and I are housemates still,"

said the aged and feeble and sedentary Coleridge, and while he thought so he felt so.

Now as we approach Malmesbury from the Chippenham direction nothing is seen of the abbey; it commands no conspicuous situation, and is nowhere visible, although it and the town are on the sides of a sharp hill. Passing a large cloth mill to the right and crossing the Avon we enter the old borough and market town of Malmesbury. Remains of old architecture crop out here and there. A steep, very steep, pull gets us into the principal street, and before us are the beautiful ancient market cross and more beautiful abbey. Malmesbury people had trimmed up their old town. Arches were above us; even lamp-posts looked green and gay with evergreens and flowers, and the grand old market cross was well nigh covered with garlands and inscriptions. By the way, a friend of mine inquired of a working man recently as to what he had been doing lately. The man replied he had been putting up "the welcomes and the harches," meaning welcomes and arches, it having been the flower-show time in the town. "Welcome" is a pretty word, but there might be a little variety.

The Malmesbury Show is not open yet, so I took a turn in the abbey, and thought of William of Malmesbury of excellent and worthy memory, and of Thomas Hobbes of at least doubtful memory, for his works, says one, "were censured by Parliament, ordered to be burnt by Convocation, and opposed by the English Universities." The present remains of the abbey comprise only that part of the church called the nave with its aisles now used for service, parts of the transept, and the south porch—but they are glorious fragments, and one felt, standing under the lofty uncovered arches which once supported the central tower, that indeed the dark ages might be dark, but were not *stone blind*; at any rate they knew how to mould the stone into marvellously beautiful forms. About a fourth, perhaps, of the abbey still remains, and happily within the memory of the very old guide to the ruins decay has not visibly increased. I had approached the abbey from the south side, and from that side I had noticed that it was not far visible; but it is just the contrary on the north side, on which is a wide valley towards Tetbury, hence in that direction the abbey must be seen for many miles, as the ground continues to slope from it immediately.

Watching my watch, I find it is three o'clock, the time the Show opens; and as I had, in entering Malmesbury, caught a glimpse of white tents, I had to retrace my steps some distance, and at length stand before the gates of Burton Hill, the residence of Col. Miles, where the flower, poultry, and Pigeon Show is held by the courtesy of its owner, for it is a flower, poultry, and Pigeon Show. Now, having had something to do with the management of shows, and twice having had my coat almost torn from my back by crowds struggling to get "tickets," and knowing that other committee-men have frequently been in the same position, I am, therefore, sure that a practical hint, albeit on a very humble subject, is of value. What, then, is the best way to avoid the tremendous crush at a flower show when the day is fine, and the sixpenny time, five o'clock, arrives? When people want to get in, and are hindered, and the hour not long before the show closes, they crush, jostle, struggle, and lose their tempers. If the pay-place is the entrance itself it is impossible to keep the crowd back, and many enter without paying at all. If, as often, the tickets are to be had at a tent near, over

goes the tent with the crowds pushing. Here, then, is the best plan—1st, Have a large number of tickets printed. This prevents the necessity of getting back the tickets from the entrance, and I have seen poor committee-men sadly mauled in their struggles to get back a few dozen tickets from the men at the gate, while the crowd were shouting, "Tickets here, quick!" A large number being printed this is avoided, and let the man at the entrance have a bag on his left arm to drop the tickets in, so that there can be no possibility of anyone getting hold of them for use without payment. 2ndly, A hundred yards or so from the entrance have an omnibus drawn up against a wall, and three, or better four, committee-men shut inside, and give the tickets and receive the money through the windows, as at a railway station. This is done quickly, people are pacified, and they walk on quietly to the gate. 3rdly, Let there be a conspicuous placard high up above the omnibus, with the words, "Tickets only to be had here." This avoids people clamouring at the entrance, and then having to walk back for their tickets. If these rules are observed, and they were partly at Malmesbury, all will go on smoothly. It is not to be wondered at if people are impatient to get inside a show when in an hour or two the specimens will begin to be removed. I receive my ticket from the omnibus and walk up to the gate guarded by two rosy-cheeked policemen, who look far too good-natured to interfere with the British subject unless he is very troublesome—just, in fact, what John Bull requires of the gentlemen in blue, and nothing more. Of the Show itself I will prattle next week.—WILTSHIRE RECTOR.

VALE OF TODMORDEN POULTRY SHOW.

THE third annual Show of the Todmorden Agricultural Society took place on the 7th inst. The entries of poultry, Pigeons, and Rabbits amounted to nearly four hundred, and the attendance of visitors was also good. The pens used were Turner's, and so placed that visitors could examine the specimens from both sides. The care and attention of the Secretary of this department were commendable.

In the poultry classes most of the birds were young. The entries in the *Game* classes were not numerous, and though some of the winners were promising birds, there were many otherwise good that were duck-clawed—the most unsightly fault this variety can suffer from. A cup was offered for adult *Brahmas*, and this was easily won by excellent birds in fine order, and the winning *Brahma* chickens were also fine. In *Cochins* a handsome full-coloured pair of Bufts were first; and Partridge, good in colour and well grown, second; a pair of Whites being highly commended. *Dorkings* were large and good in colour, all of the Dark variety, except one pen of White. The first-prize pair were the best we have seen this season. *Spanish* were few and poor. Golden-spangled *Hamburgh* pullets were good, but the cockerels only of ordinary quality. Golden-pencilled *Hamburghs* were an even lot, although the pullets were a little open in marking. The Silver-pencilled were the best of the *Hamburghs*, and if we except the cockerel's tail, which was a little grey, the first-prize pen was perfect. Black *Hamburghs* were only of moderate merit, whiteness of face prevailing in the cockerels. *Game Bantams*, with the exception of three pairs of Piles, which were respectively first, second, and highly commended, were not good, many of the Reds being faulty in colour. In the class for Any other variety of Bantams, a pretty pair of Gold-laced were first, and Blacks second. In French Fowls a handsome pair of Crève-Cœurs were first, closely pressed by very good Houdans. In the Variety class Golden Polands won both prizes, and in the Selling class Gold Polands were first, and Rouen Ducks second. The winners in Aylesbury Ducks were very good in all points.

Of *Pigeons* there was a good entry in most of the classes, the Pouters being first on the list; the winners of the first prize were Blue, and the second-prize birds Red; both pairs were of great size. Carriers were fair, Blacks being first and Duns second. Of Almond Tumblers there were only two pairs; the first were fine in every particular. The second-prize hen was very good, but the cock a little cloudy in feather, though good in head, beak, and eye. In Tumblers of any other variety Black Mottles were first, with a very neat pair of Blue Beards second. Dragoons formed a large class, and the competition was close. Blues were first, and Yellows second. Fantails were good. The style, tail, and carriage of the winners were perfect; smallness of size alone turned the scale for the first prize. Jacobins were poor, with the exception of the winners; Reds were first, and Blacks second. Barbs were a fair lot, Blacks taking both the prizes. Antwerps were very fine; both pairs of prize birds were Duns. Turbits, with the exception of the winners, were poor. Yellows and Blues took the prizes. Trumpeters were poor, but the English Owls were a fair class. The first-prize cock was a gem. In the class for Foreign Owls, Whites were first, and Blues second. Both pairs were of rare quality. There was a class for Blue Rocks, which produced some good birds. In the Variety class Black Swallows were first, and a grand pair

of Ice Pigeons second. In the Selling class good Yellow Beards and Mottled Tumblers won the prizes.

Of *Rabbits* there was a good entry in most classes. In Lop-ears a Sooty Fawn buck stood first, and a Fawn-and-white doe second, both Rabbits being good in general properties, a capital Black buck being highly commended, which would, doubtless, have been higher in the list had it not been in a bad state of moult. Angoras were good, and the winners extremely fine in fur, but young, and not large. Himalayan were in good order, and good in points. Silver-Greys were a splendid lot, and the contest close, the silvering of the two winning Rabbits being very even throughout. In the class for Any other variety a fine Patagonian was first, and a perfect Grey-and-white Dutch second. In the Selling class were some very cheap specimens, a Black-and-white Lop, 22½ inches by 4½ being first, and a Lop 19½ by 4½ second, while a pretty Angora was highly commended.

GAME.—Cockerel.—1, C. W. Brierley, Middleton. 2, T. Dyson, Halifax. *hc*, W. Ormerod, Todmorden; W. Tiltson, Coates, Barnoldswick. *Pullet*.—1, R. Hutchinson, Shaw-moss, Littleborough. 2, C. W. Brierley. *hc*, T. Dyson; W. Ormerod, A. Milns, Rochdale.

GAME.—Black or Brown Reds.—Chickens.—1, T. Dyson. 2, C. W. Brierley. *hc*, W. Ormerod; W. Tiltson. *Any other Variety.—Chickens*.—1, T. Dyson. 2, M. Collinge, Todmorden.

BRABMA POOTRA.—Dark.—1, Cup, and 2, H. Lacy, Hebden Bridge. *hc*, J. Watts, King's Heath, Birmingham. *Any Colour.—Chickens*.—1 and 2, H. Lacy. *hc*, A. G. Wallis, Southport; J. Watts. *c*, J. Watts. *Chickens—China*.—1, H. Lacy. 2, C. Sidgwick, Keighley. *hc*, C. Sidgwick; R. S. S. Woodgate, Pembury, Tunbridge Wells; H. Pickles, Earby, Skipton.

DORKING.—Chickens.—1, H. Pickles. 2, J. Stott, Healey, Rochdale. *hc*, E. Leech, Rochdale; J. Watts.

SPANISH.—1, C. W. Brierley. 2, W. Eastwood, Whiteliese, Littleborough.

HAMBURGHS.—Gold-pencilled.—Chickens.—1, J. H. Fisher, Inghild, Walsden. 2, H. Pickles. *hc*, Countess of Tankerville, Alnwick. *Gold-spangled.—Chickens*.—1, Countess of Tankerville. 2, R. H. Ashton, Mottram, Manchester.

HAMBURGHS.—Silver-pencilled.—Chickens.—1, J. Bowness, Newchurch. 2, Countess of Tankerville. *hc*, H. Pickles. *Silver-spangled.—Chickens*.—1, J. Bowness. 2, H. Pickles. *hc*, H. Stanworth, Worsthorne, Burnley. *Black.—Chickens*.—1, Countess of Tankerville. 2, J. Bowness. *hc*, C. Sidgwick. *c*, H. Hoyle, Lumb, Newchurch.

BANTAMS.—Game.—Chickens.—1, W. F. Steel, Halifax. 2, W. Barton, Haslingden. *hc*, T. Barker, Hill-end, Burnley (2); W. F. Steel (2). *Any other variety.—Chickens*.—1, E. Walton, Rawtenstall. 2, J. Sutcliffe, Hebden Bridge. *hc*, E. Walton; W. Moor, Keighley.

FRENCH.—1, E. Smith, Timperley. 2, R. Coney, Alford. *hc*, J. D. Ashworth, Burnley.

ANY OTHER VARIETY.—1, P. Unsworth, Lowtown. 2 and *hc*, J. Fearnley, Laxey, Newton-le-Willows.

SELLING CLASS.—1, J. Fearnley (Golden-spangled Polands). 2, J. Fielding, Littleborough. *hc*, E. Leech, Rochdale; R. Hutchinson, Shaw-moss, Littlehampton. *c*, J. Mitchell, Stoodley, Todmorden (Brahma); J. Fielden (Blue Spanish).

DUCKS.—Aylesbury.—1 and 2, E. Leech. *Rouen*.—1 and 2, T. Wakefield, Ghorne, Newton-le-Willows. *c*, P. Unsworth. *Any other Variety*.—1 and 3, W. Sudd, Pudsey, Leeds (Fancy). *c*, H. B. Smith, Brooklands, Broughton, Preston. 4, J. Trickett, Waterfoot. *hc*, E. B. Smith (Fancy); Countess of Tankerville (Shell Ducks).

GEESSE.—1, E. Leech. 2, J. Hindle, Darwen. *hc*, J. Higgin, Hurstwood, Burnley; E. Leech.

TURKEYS.—1, E. Leech.

PIGEONS.

POUTERS.—1 and 2, E. Horner, Harewood, Leeds. *hc*, J. Watts.

CARRIERS.—1, J. Stauley, Blackburn. 2, H. Yardley, Birmingham. *hc*, E. Horner (2).

TUMBLERS.—Almond.—1, J. Fielding, jun., Rochdale. 2, E. Horner. *Any other Variety*.—1, E. Horner. 2, J. Fielding, jun. *hc*, W. Sefton, Blackburn (Blue); H. Yardley.

DRAGOONS.—1, E. Horner. 2, W. H. Mitchell, Moseley, Birmingham. *hc*, W. Maudslayi, Dean, Bolton; J. Stanley; E. Horner; W. H. Mitchell.

FANTAILS.—1, J. F. Loversidge, Newark. 2, H. Yardley. *hc*, J. F. Loversidge; E. Horner.

BARBS.—1, J. Fielding, jun., Rochdale. 2, E. Horner. *hc*, H. Yardley; E. Horner.

JACOBINS.—1, W. Binns, Pudsey, Leeds. 2, H. Yardley. *hc*, E. Horner.

ANTWERPS.—1, H. Yardley. 2, E. Horner. *hc*, J. W. Collinson, Halifax; D. E. Sudd, Todmorden; J. Stanley. *c*, A. Justice, Salford.

TURBITS.—1, J. E. Mason, Bradford. 2, J. Fielding, jun. *hc*, W. Kitchen, Fenniscowles, Blackburn (2).

TRUMPETERS.—1, E. Horner. 2, J. Furness, Dewsbury Moor.

OWLS.—English.—1, B. Cockroft, Hebden Bridge. 2, J. Ingham, Halifax. *hc*, J. Watts; B. Consterdine, Littleborough. *Foreign*.—1 and 2, J. Fielding, jun. *hc*, E. Horner; J. Watts.

ROCKS.—Blue.—1, J. Crabtree, Ewood, Mytholmroyd. 2, M. Uttley, Long-leas, Walsden. *hc*, J. Wilcock, Banks, Mytholmroyd; J. Fielden, Hollingworth; E. Horner; J. Crabtree.

ANY OTHER VARIETY.—1, E. Horner. 2, H. Yardley. *hc*, J. Watts; W. Kitchen, Fenniscowles, Blackburn (2).

SELLING CLASS.—1, W. Binns (Yellow Beards). 2, J. Fielding, jun. *hc*, W. Markland, Dean, Bolton.

RABBITS.

SPANISH.—1 and 2, T. C. & H. Lord, Huddersfield. *hc*, J. Hume, York; J. Irving, Blackburn.

ANGORA.—1, W. Sutcliffe, Higher Howorth-fold, Burnley. 2, J. Baron, Rochdale. *hc*, W. Whitworth, jun., Longsight, Manchester (2); S. G. Hudson, Hull.

HIMALAYAN.—1, J. Baron. 2, S. Ball, Bradford. *hc*, J. Boyle, jun., Blackburn; S. Ball. *c*, B. S. Rothwell, Rochdale.

SILVER-GREY.—1, R. H. Glew, Wakefield. *hc*, J. Boyle, jun., Blackburn; J. Irving, Blackburn.

ANY OTHER VARIETY.—1, W. Whitworth, Longsight, Manchester. 2, J. Boyle, jun. *hc*, W. Whitworth; J. Irving, Blackburn; J. Baron, Rochdale; S. G. Hudson, Hull (2).

SELLING CLASS.—1, J. Boyle, jun. 2, R. Leggett Thorne, Doncaster (Lop-ears). *hc*, J. Baron, Rochdale. *hc*, W. Higham, Middleton (Spanish); F. E. O'Donoghue, Eddulph, Congleton (Silver-Grey); J. Boyle, jun., Blackburn; J. Baron; S. Buckley, Ending, Healey, Rochdale (Himalayan).

JUDGES.—Mr. E. Hutton, Pudsey, Leeds, and Mr. D. Ashworth, Halifax.

LONG SUTTON POULTRY AND PIGEON EXHIBITION.—We have just received the prize schedule of the Long Sutton Show, which is certainly a liberal one. In poultry the classes are twenty nine, in each of which will be awarded prizes of 30s., 15s., and

7s. 6d. respectively, except the Selling classes, which will have four prizes—viz., 40s., 30s., 15s., and 7s. 6d., and this irrespective of five silver cups, each valued at five guineas, for the best pens in certain of the general classes. Twenty-one classes are appointed for Pigeons, 20s. and 10s. being the respective prizes in each class; and again, in this division of the Show four silver cups for the best pens will be given. Rabbits have seven classes, with 20s. and 10s. prizes to each, and a three-guinea silver cup for the best pen shown. There are local prizes given specially for amateurs resident in the neighbourhood. The entries close on September 28th. As the whole will be exhibited under an excellent tent, and the acting Committee are fully conversant with the management of such an exhibition, no doubt this meeting of October the 9th and following day will be very successful.

POCKLINGTON PIGEON, RABBIT, AND BIRD SHOW.

THURSDAY last, the 5th inst., was a gala day at Pocklington. Besides the thirty-seven classes of Pigeons, Rabbits, and Cage Birds, which completely furnished a capacious tent, there were a large horticultural show and other attractions. The Pigeon, Rabbit, and Cage Bird classes contained many very choice specimens, which were much admired by the numerous visitors to the Show ground, including excursionists from York and other places. The arrangements were admirably conducted by the Honorary Secretary, Mr. T. Grant.

PIGEONS.

DRAGONS.—1, H. Yardley, Birmingham. 2, C. N. Lythe, Cottingham.
ANTWERPS.—1, J. N. Collinson, Halifax. 2, C. Auton, York.
POUTERS OR CROPPERS.—1, Blanshard & Marshall, Driffield. 2, C. Auton.
TUMBLERS.—1, Blanshard & Marshall. 2, C. Auton.
BARBS.—1, H. Yardley. 2, C. Auton.
JACOBINS.—1, E. G. Sanders, Leven. 2, A. J. Seller, Norton.
FANTAILS.—1, C. N. Lythe. 2, W. Bearpark, Ainderby Steeple.
TRUMPETERS.—1, Blanshard & Marshall. 2, C. Auton.
OWLS.—1, A. J. Seller. 2, H. Yardley.
TURBITS.—1 and 2, Blanshard & Marshall.
CARRIERS.—1, H. Yardley. 2, C. N. Lythe.
NUNS.—1, Blanshard & Marshall. 2, C. Auton.
ANY OTHER VARIETY.—1, A. J. Seller. 2, C. N. Lythe.

RABBITS.

LONGEST EARS.—1, T. Taylor, York. 2, J. R. Lunn, Hull.
ANY OTHER VARIETY.—1, J. R. Lunn. 2, R. A. Taylor, Hull.
ANY VARIETY.—Buck.—1, W. H. Webb, jun., Bilston. 2, C. Miller, Hull. Doe.—1, R. A. Taylor. 2, C. Miller.

CAGE BIRDS.

CANARIES.—Belgian.—Clear or Ticked Yellow or Buff.—1 and 2, W. Forth, Pocklington.
HALF-BRED BELGIAN.—Clear or Ticked Yellow or Buff.—1, J. Hird, Market Weighton. 2, W. Forth.
NORWICH.—Clear or Ticked Yellow.—1, T. Barwell, Northampton. 2, W. H. McCollin, Hull. Buff.—1, J. Calvert, York. 2, T. Barwell.
CRESTED.—Any Breed.—1, J. Calvert. 2, W. Forth.
YORKSHIRE.—Clear or Ticked Yellow or Buff.—1, A. Brazendale, Pocklington. 2, R. Hutchinson, Pocklington.
NORWICH OR YORKSHIRE.—Even-marked, Yellow or Buff.—1, W. Petty, York. 2, J. Goode, Leicester. Uneven-marked, Yellow or Buff.—1, W. Forth. 2, W. Petty.
ANY OTHER VARIETY.—1, J. Calvert. 2, J. Shaw, Pocklington.
NEST OF YOUNG CANARIES.—Any Variety.—1, J. Downs, Beverley. 2, T. Barwell.
GOLDFINCH MULE.—Variegated.—1, J. Goode. 2, D. McCollin, Hull. Dark.—1, W. Forth.
GOLDFINCH.—1, W. Petty. 2, H. Shaw, Pocklington.
LINNET.—1, H. Shaw. 2, A. Brazendale.
BULLFINCH.—1, W. Petty. 2, W. J. Appleby, Pocklington.
LARK.—1, H. Curtis, Pocklington.
PARROT OR PARROQUET.—1, J. Calvert. 2, A. Remner, Naburn.
CAGE BIRD.—Any other Variety.—1, J. Boulton, Pocklington. 2, Wilberforce Pocklington.
CAGE OF CANARIES IN VARIETY.—1, J. Calvert. 2, W. Petty.
EXTRA PRIZE.—J. Calvert (Rose-breasted Cockatoo).
JUDGE.—Mr. G. J. Barnesby, Derby.

SCOTCH HOUSE AND AIR TUMBLERS.

To the uninitiated it will no doubt seem somewhat strange that birds bred from the same parents should in some cases prove Air Tumblers, and in others House Tumblers; this, however, is easily understood when it is explained that the most successful method of breeding performing birds is to cross birds of high merit in the one class with birds of equally high merit in the other class, the object aimed at being, by the use of the Air Tumbler, to prevent the tumbling of the House Tumbler from degenerating into rolling, an evil which cannot be too carefully guarded against in birds which tumble so near the ground. On the other hand, if it is wished to add to the amount of tumbling done by the Air Tumbler, with regularity in the performance of it, there is nothing to equal the cross with the House Tumbler for producing it. Of this fact I had lately a striking testimony from an old fancier of probably between sixty and seventy years of age, who told me that he had bred Flying Tumblers during the greater part of his life, but that until he obtained a cross of some House Tumblers some four or five years ago he had done comparatively little good with them. On account of the method in which numbers of these birds are bred the produce must vary considerably in the character of their performances, and, besides high-class House and Air

Tumblers, many birds of fair quality are produced whose characteristics are of an intermediate type, and many possessing little merit at all, even when the parents are highly bred and the matching all that could be desired. Indeed, if one-half the young produced prove of first-rate or medium quality, the owner may be considered to have extraordinary good luck, as this would be much above the average result.

I shall now endeavour to describe some of the characteristics displayed by these birds from the time of their leaving the nest until they finally develop into the full maturity of high-class performers, leaving out of account altogether birds of an intermediate or inferior type, as it would be impossible to describe in a brief space all the vagaries which one observes.

House Tumblers vary greatly in the age at which they begin to tumble; some commence almost as soon as they can fly; in some rare instances they have been known to do so the first time they were seen to come out of the nest; others, again, do not begin until they have reached some considerable age, one of the best I ever had never having been known to tumble until it was three years old. In fact they may begin at any age between six weeks and three years, or possibly even later, although I never knew of any older, but I suspect very few birds which have not previously shown any tumbling properties, are allowed to reach this age, the one to which I have alluded having been discarded by two different owners who knew how it was bred, and ultimately developed into a "first-class incapable" in the hands of a party who bought it for 6d., and knew nothing about its parentage.

I incline to think, although ultimately there comes to be little difference between the performances of the two sexes, that as a general rule hens begin at an earlier age than cocks, but in the majority of cases both sexes are tumbling by the time they are fit for pairing; in either sex, if a well-bred bird possesses any special merit in shape or colouring to make it desirable to breed from it, it should not be parted with for want of tumbling until thoroughly well tried, as it is a popular belief, perhaps not without some foundation, that it is the best birds which develop latest. The great bulk of young birds, before beginning to tumble, "back" for some time, but in a few cases they go clean over at the very first attempt. I have amongst this season's birds two hens which I never saw "back" at all; the one is now tumbling excellently in the house, and the other doing as well for its age outside; the latter I counted doing twenty times a minute when it was little more than two months old.

After the young House Tumblers begin to tumble, as a general rule they do not do any great amount of work at the very first, but perhaps tumble only at intervals few and far between; if kept, however, in regular training they generally all improve more or less, and many of them soon do a pretty fair amount of work, tumbling moderately if not excessively when flying in the air. At this stage it is very difficult to say to what class they will ultimately belong, but if they reach thirty times a minute I set them down as Air Tumblers, as but few House Tumblers ever come to do this amount of work when flying, the change from an Air Tumbler into a House Tumbler generally taking place before this point is reached.

The transition generally takes place very suddenly; in one instance, which I have on the authority of a gentleman on whose word I rely as much as if I had seen the performance myself, it took place in a bird which had never previously tumbled at all, while it was sitting on the top of his house, the bird all at once becoming unable to fly for tumbling, and ever afterwards remaining a first-rate House Tumbler. In birds which are kept in training the change is generally preceded for a few days by a rapid improvement in the amount of work done, but as the performance becomes more regular and steady the style of doing it generally becomes worse, the tumble being accompanied with a greater sweep in going over; and although they may now do less steady flying between the performances than an Air Tumbler, doing forty times a minute, they will rarely count more than twenty times. When the flight rises a bird at this stage will now be speedily seen in the rear unable to rise with it or make the same progress, and if, finding its inability to continue with the others, it turns in time and settles on the top of the house, it will be better to confine it afterwards, as it will probably be tumbling inside in the course of a few days, if it is not already doing so. Should it persevere and go too far from home it may become exhausted, and be obliged to settle down on the top of some house from which it may not be able to rise for hours, and perhaps not at all, as some prowling cat may put an end to all farther efforts on its part, or perhaps it may come down to the ground by gradually descending tumblers resembling a flight of stairs. But it should not roll down; if it do so, the probability is that if it come from any great height it will be killed, or at least severely injured; if it descends in the way I have described it will reach the ground from any height totally unharmed. Should it happen to alight in the public street it will probably be seized by the first boy who passes, instantly thrust out of sight under his jacket, and without loss of time exchanged for 6d. in the first poulterer's shop he comes to, in happy un-

consciousness that he might have made a better bargain by returning it to its disconsolate owner.

While it would be impossible to set down any certain time for Air Tumblers to begin performing, I think they make a commencement more uniformly when young than House Tumblers do, and in their case the improvement in the amount of work they do goes on steadily increasing with age, until it reaches the full maturity of growth, without any of the spasmodic spurts to which House Tumblers are subject; and not only does the amount of work they do increase, but the more numerous the tumbles become the more cleverly is the performance made, the improvement in style being more particularly noticeable after they have reached the stage at which House Tumblers begin to deteriorate.

The only reason which occurs to my mind for the difference between the two birds is that the Air Tumbler is by far the gamier bird of the two; that while the House Tumbler gets frightened and overpowered by the weight of tumbling which is upon it, the Air Tumbler through sheer courage learns to catch himself up so quickly that the tumbling proves but little impediment to his flight. This does not, however, account for the whole difference, as a House Tumbler will develop into an "incapable," even if never trained, but only allowed liberty in the open air, and some, even although never down out of the loft; such birds never having been under the influence of any great amount of tumbling cannot possibly succumb to that. I may here add that I have experience of never allowing them out of the loft, of giving them entire liberty, and of training them, and of the three ways have found least success in the first, and the greatest in the last. It undoubtedly requires a good deal of attention to keep them in proper condition, but without it the qualities of the best Air Tumblers must remain hid.

In structural differences there is little to note between the two classes. I find amongst my own birds that the Air Tumblers possess eyes of surpassing clearness in the pearl, decidedly superior to the House Tumblers, but I am told by persons of more experience than myself that this is not at all a general rule. I have also two first-class House Tumblers, a cock and a hen, with drop wings, but do not recollect of having seen a good Air Tumbler with such, and do not think that they would give sufficient power to keep the air and tumble much, as I look upon a drop wing as an indication of a weak wing.

In my next communication I shall give some notes on the House Tumbler as a bird of the loft or aviary.—SCOTCH THISTLE.

FEATHER-EATING PARROT.

I HAVE a grey Parrot which has the bad habit of eating his tail feathers, and as he is a very valuable bird for his talking qualities, I wish some of your correspondents could inform me of something that would cure him of this evil propensity. He has never had any animal food, but is fed on Canary seed, and occasionally bread soaked in tea or water.—JOHN STUART.

[Should the bird's cage have a wire bottom, let it be taken out at once, and give the Parrot plenty of sand with some small stones in it, so that the bird may pick out some and swallow them, then give a change of diet; let the bird have some soaked Indian corn, and some fruit and green food, watercresses, &c. You are quite right in not giving it animal food; a piece of bread dipped into a boiled egg is an enjoyable morsel to a Parrot. If change of food and what we have recommended has no effect on the habit, then make what is called a "cradle" in the stable, and put it on the bird's neck until the bad habit is forgotten. The collar, or cradle, can be made either of leather or pieces of cane fastened with string. It will not in the least hurt the bird to wear it.]

OPENING OF THE SEASON—CANARY SHOW, WHITBY.—Intending exhibitors at this Show are reminded that the entries will close on the 17th inst., and that the Show will be held on the 24th (see advertisement). W. A. Blakston, Esq., has been appointed Judge.

DRONE EGGS LAID BY WORKER BEES.

I HAVE a queenless Ligurian stock in which this abnormal state of things exists: hence an interesting question has been raised, Are these drones perfect? If so, it is proposed to allow the fertile workers to go on breeding, and, if necessary, unite some worker bees to them late in autumn, so as to keep up some kind of organisation and vitality in the hive, supplying drone comb also if necessary. Then, if they survive the winter, we should have a hive of Ligurian drones with which to operate in producing pure Ligurians in the spring before other drones are abroad. Will you kindly give your opinion as to the value of the drones in question, also stating whether you think there is any chance of success in trying the proposed experiment, or if it is worth trying?

I have another hive in a perplexing state, respecting which I should be glad to have your opinion and advice.

To understand the position of affairs properly it will be necessary to be particular as to details. The colony, a black one, a first swarm of last year, occupies a Taylor's bar hive. At the end of May this year it was in a strong and vigorous state, but about the beginning of June the queen seems to have died, as soon after the hive was observed to be retrograding. On June 22nd a careful inspection was made, and neither queen nor brood in any stage was found. On July 3rd, through the kindness of a friend, I obtained a closed Ligurian queen cell with a small piece of comb attached. It had to be brought several miles and afterwards kept artificially warm for several hours before it could be introduced to the bees; but they took to it at once, brooding over and covering it, and showed by their increased vigour and energy that a new era had dawned upon them. On July 8th I removed the piece of comb and cell, and found it empty. The queen was evidently hatched, and this was confirmed also by the continued zeal and activity of the bees; but on July 13th my garden was submerged by the floods which prevailed over Lancashire, and being from home my apiary was almost ruined. On returning home in the evening I found this young Ligurian queen and about a third of the bees had been saved in a singular manner. The hive, when floated from its stand by the water, had been tilted over on its side, causing a piece of glass which covered the crown hole to slip off. The queen and part of her subjects escaped through this hole and were found clustered outside. I got them under the shelter of an empty straw hive, and there being no brood in their own hive, I removed the bars and combs, and carefully dried them as well as the hive itself; and the second day after the disaster I restored the queen and bees to it, together with the remainder of another stock whose queen, with the greater part of the bees, was lost in the deluge. The two lots united made but a weak swarm; however, I commenced to feed sparingly but frequently, so as to stimulate them in their unfortunate condition. Three weeks after the mishap I began to look for young Ligurians, but it was not till the morning of August 17th that I found one in front of the hive dead, which on examination proved to be a small drone raised in a worker cell. Next morning above a dozen of the same sort were found in the same place. This was ominous, as it indicated an unimpregnated or otherwise drone-breeding queen; but at noon of the same day well-marked young Ligurian workers appeared, and these have increased rapidly every day since; but the small abnormal drones are still being ejected, apparently as they emerge from the cells. They are evidently not allowed to take wing, but are ruthlessly expelled as they appear. Had these only been produced it would have been easily accounted for, but the partial aberration is mysterious, and in my experience unprecedented.—J. B.

[We much doubt the success of your scheme, although we should be extremely glad on scientific grounds if you would carry it out. Your only chance of success lies in keeping up a sufficient supply of worker bees all through winter and early spring, and keeping them up to the breeding point throughout. Your second case of perplexity is a very interesting one, but evidently you have a very fertile and valuable queen. The fact of her breeding drones so early in her life, and at the same time producing workers in abundance, is a proof of her excellence in our judgment. We should advise this hive being carefully tended and fed. Your loss from the deluge reminds us of a similar loss which Dr. Bevan, at the age of ninety, experienced during a flooding of the Wye at Hereford some twenty years ago.]

BEE-KEEPING, 1872.

THE account of the present bee season given by "B. & W." in your issue of August 1st so nearly describes our case, that I feel somewhat consoled to find that we beginners have but shared the fate of experienced bee-keepers. Our bees have swarmed with equal persistency. A succession of cold, wet, and windy days, which kept the bees prisoners while their numbers were hourly increasing, was followed by a warm gleaming day, when out came the swarm, and no super, whether large or small, straw, wood, or glass, proved lastingly attractive to them. We have no reason to complain with regard either to healthiness or population; they increase abundantly.

At the close of last season, by dint of uniting several stocks, we reduced our number to ten hives, all strong and healthy. They kept well through the winter; one showed signs of weakness in the unseasonable month of April, but a little timely feeding soon brought it round.

In spite of the wintery weather in the spring all the stocks seemed active and thriving, and by May 28th seven were working in supers. But alas! our hopes were soon destroyed; one after another came swarm upon swarm, though beautiful pieces of comb had been made in the supers, and in some a few cells of honey were sealed over. The swarming continued throughout June; at last we hived some bees in empty supers, placing

them over the hives whence they issued. They quietly fraternised, and a dead queen on the ground the next morning led us to hope they would rest in peace, which they did, and swarmed no more, but still the supers were deserted.

A prime swarm, hived on June 3rd, is now working in two supers, the second having been opened when the bees showed signs of overcrowding. One of the old stocks is also working in the super, and we took one off filled on the 19th of July, while eleven supers show nothing but empty comb.

Our neighbourhood (West Norfolk) is essentially agricultural, and therefore not a honey-producing district. Very rarely does even a field of white clover gladden our eyes; and in the spring, when the blossoms of fruit trees and wild flowers abound, the weather is so ungenial that our little favourites can with difficulty venture out to forage. We do all we can to help them in our garden, which is large. We have thousands of snowdrops and crocuses, box trees in abundance, long ranges of thyme, mignonette, borage, &c., Phacelia and *Salvia nemorosa*, which two last flowers they are remarkably fond of. Our hives are of various kinds—the improved cottage, the economic, Sadler's Berkshire hive, and two Woodbury hives. The last-mentioned have greatly disappointed us; the bees have not filled one super in either of them in any one year, and the only honey we have obtained from them has been by taking out the two outer frames at the end of the season. All our hives are well protected from rain and sun, even the deluges of this season have failed to produce any trace of damp.

As to Ligurians, our attempts to introduce them have proved so disastrous that we have bid adieu to them for ever. Our black bees are fully as prolific as we could desire.—*DRINA*.

OUR LETTER BOX.

EARLY-BREEDING PULLETS (M. A. W.).—In many breeds, as Cochins and Brahmas, it is not uncommon to find layers at sixteen weeks old, but careful breeders never set their eggs. One of the best poultry authorities has said, "Never set the early eggs of a pullet." We agree with him. Your experience will agree with ours. The chickens may be strong, but they will never be large. We nevertheless thank you for your letter. It is only by communicating our experiences one to the other that we can derive the profit and pleasure attached to the pursuit we like so much.

LICE ON FOWLS (Subscriber).—Your fowls are dying from the effects of parasites—call them what you like. When they attach themselves to a bird they worry it to death. The treatment for the fowls is to daub them with oil at the back of the head, on the backbone, and under the wings. To prevent the continuation of the plague provide the birds with plenty of road grit, placed in heaps of about a bushel in their haunts. Wash the walls with carbolic acid diluted according to necessity. Let the operator mix it very strong, and, above all, work it into every hole, corner, and cranny of the house.

CHARACTERISTICS OF SILVER-GRAY DORRING COCK (Frodsham).—Scrupulously black tail and breast, white hackle and saddle, wing barred with dark blue steel and white bars. One spot of white in the tail, or on the breast, is a positive disqualification.

MUSK DUCKS (H. E. R.).—They are thus described in the "Poultry-keeper's Manual":—"The Drake often weighs 9 or 10 lbs., but the Duck never exceeds 5 or 6 lbs. The bunch of red, warty flesh near the bill, and the crest raised or depressed at pleasure, are striking characteristics. They often rest on a wall, or branches of a low tree. The drake has a harsh, croaking note; but the Duck is rather silent. Eggs dull white; weight about 3 ozs."

—(W. H. W.).—Next week.

ENGLISH GRAY (A Struggling One).—We never knew poultry dung sold and we know of no market for it except the market gardeners in your own neighbourhood. It is a very rich manure.

RABBIT'S EYE DISCHARGING (S. Hill, jun.).—Your Rabbit seems to have some internal gathering in the region of the eye, which will require a little patience in its cure. Wash it two or three times during the day with warm milk and water; keep it free from cold, and well supplied with food of the most nutritious kind. Ulcers will be found at times, but we think yours suffers from the effects of cold. As the eye is exceedingly delicate, all treatment should be very careful. When the eye is free from the discharge, an application every alternate day of the following restorative for the growth of the hair will be of service—viz., 1 oz. of honey, ½ oz. of laurel oil, ½ oz. linseed oil, and ½ oz. of onion juice, all mixed well together.

THE ANDALUSIAN RABBIT (H. B.).—It is a native of Spain, reared also in France, and in the neighbourhood of Paris in particular, as the Ram Rabbit, and called so in consequence of its head being large, with a round forehead. The ears hang loosely, almost as in the half-lop Rabbit. The largest importers of this variety are Messrs. Baily & Sons, 113, Mount Street, Grosvenor Square, London, yet several private gentlemen keep them in their rabbitries, and might have some to spare.

TWO QUEENS (C. L. F.).—When bees are driven together from different hives the queens always settle their differences, and the weakest goes to the wall.

BEE SPECIMEN (Thos. Smith).—The bee you forwarded to us for inspection was a worker, and not a queen.

WAR OF THE BEES (B. B. Alexander).—We are glad to find that your difficulties are so well over. Pray give us the description of your house, which you speak of.

HONEY IN SUPER (W. J. J.).—We advise you not to meddle with your stock hive, but to content yourself with the honey in the super. You may possibly so injure the bees as to cause their destruction in the winter. The gain of honey would not compensate for your loss. As to the super, one or two puffs of tobacco at the entrance of the hive will drive the bees in, then lift the super gently, and give a few puffs while doing so. Next lift the super off, and if it has only a few bees in it, brush them out with a feather near the hive, blowing in a puff of the tobacco now and then; but if full of bees,

imprison them for half an hour or more in a dark place near the apiary, then let them go. At this time of year, when bees are quick to detect the scent of honey, you must watch the super for fear of robbers, and act accordingly, shutting them up again if necessary for a time. A fine afternoon is the best time.

TRANSFERRING BEES (A. I. W.).—It is quite as feasible to hive an ordinary swarm in a bar-frame hive as into any other hive. Perhaps, however, you mean to ask if it is easy to transfer the bees of an established swarm into a bar-frame hive. This can be done too by taking out the combs and affixing them to the bars, but it wants a very practised hand to do this. We have forwarded your letter to the gentleman to whom you allude.

METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		A.M.				IN THE DAY.						Rain.
1872.	Sept.	Barom. at Sea and Land Level.	Hygrome- ter.		Direction of Wind.	Temp. of Air at 5 ft.	Shade Tem- perature.		Radiation Temperature			
			Dry.	Wet.			Max.	Min.	In sun.	On grass		
We. 4		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.		
		29.617	71.4	67.0	S.W.	63.3	77.4	61.6	121.6	58.0	0.072	
Th. 5		29.798	66.3	61.2	S.W.	62.5	74.0	61.2	121.2	58.1	—	
Fri. 6		29.841	65.3	60.0	S.	61.8	74.5	55.0	124.8	51.3	—	
Sat. 7		29.840	65.0	59.8	W.	61.5	73.8	57.3	121.7	54.2	—	
Sun. 8		29.971	63.5	55.8	W.	60.6	70.6	51.0	116.8	49.1	—	
Mo. 9		29.904	62.9	58.3	S.	60.4	69.0	54.8	97.3	52.9	0.030	
Tu. 10		29.950	61.2	55.7	S.W.	61.1	68.6	49.9	108.3	48.2	0.010	
Means		29.846	65.1	59.3		61.9	72.4	55.8	116.0	53.1	0.102	

REMARKS.

4th.—Dull morning, rain about 11 A.M.; fine afternoon; much lightning in the N.N.W. after 8 P.M.
5th.—Hazy at 7 A.M., fine after; a most lovely day, nice breeze; stars very bright at night.
6th.—Fine in the early part of the day, but cloudy and rain-like in the evening; fine night.
7th.—A few drops of rain about 8 A.M., then fine all day.
8th.—Fine bright morning, rather cloudy about 11 A.M.; fine after, with nice breeze, making it very enjoyable.
9th.—Fine morning, but some very slight showers during the day, heavier in the evening, but fine night.
10th.—A very pleasant day, a few drops of rain occasionally, but very slight. Temperature higher than last week, warm for the time of year, and equable, the extreme range being only from 49.9° to 77.4°. Very little rain, and pleasant winds.—G. J. SYMONS.

COVENT GARDEN MARKET.—SEPTEMBER 11.

A LIMITED supply of fruit, and the greater part of that fit for dessert is Continental, most of the English growth being rough and very much spotted.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	½	sieve	3	0	0	0		0	0
Apricots.....	doz.	0	0	0	0				
Cherries.....	per lb.	0	0	0	0				
Chestnuts.....	bushel	0	0	0	0				
Currants.....	½ sieve	0	0	0	0				
Black.....	do.	0	0	0	0				
Figs.....	doz.	1	6	3	0				
Filberts.....	lb.	1	0	0	0				
Cobs.....	lb.	1	0	0	0				
Gooseberries.....	quart	0	0	0	0				
Grapes, hothouse.....	lb.	2	0	5	0				
Lemons.....	½ 100	6	10	0	0				
Melons.....	each	2	0	5	0				
Mulberries.....	½ lb.	1	0	0	0				
Nectarines.....	doz.	3	0	8	0				
Oranges.....	doz.	1	0	0	0				
Peaches.....	doz.	4	6	12	0				
Pears, kitchen.....	doz.	3	0	3	0				
dessert.....	doz.	2	0	4	0				
Pine Apples.....	lb.	3	0	6	0				
Plums.....	½ sieve	5	0	0	0				
Quinces.....	doz.	1	0	2	0				
Raspberries.....	lb.	0	0	0	0				
Strawberries.....	½ lb.	0	0	0	0				
Walnuts.....	bushel	10	0	25	0				
ditto.....	½ 100	1	0	2	0				

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	doz	2	0	4	0				
Asparagus.....	½ 100	0	0	0	0				
Beans, Kidney.....	½ sieve	2	0	0	0				
Broad.....	bushel	0	0	0	0				
Beet, Red.....	doz.	1	0	3	0				
Broccoli.....	bundle	0	9	1	6				
Cabbage.....	doz.	1	0	1	6				
Capiscums.....	½ 100	3	0	4	0				
Carrots.....	bunch	0	6	0	0				
Cauliflower.....	doz.	2	0	4	0				
Celery.....	bundle	1	6	2	0				
Coleworts.....	doz.	2	0	3	0				
Cucumbers.....	each	0	2	0	0				
pickling.....	doz.	0	0	0	0				
Endive.....	doz.	2	0	0	0				
Fennel.....	bunch	0	3	0	0				
Garlic.....	lb.	0	6	0	0				
Herbs.....	bunch	0	3	0	0				
Horseradish.....	bundle	5	0	7	0				
Leeks.....	bunch	0	2	0	0				
Lettnce.....	doz.	0	9	1	0				
Mushrooms.....	pottle	1	0	3	0				
Mustard & Cress.....	punnet	0	2	0	0				
Onions.....	bunch	0	4	0	0				
pickling.....	quart	0	6	0	0				
Parsley per doz. bunches		3	0	4	0				
Parsnips.....	doz.	0	9	1	0				
Peas.....	quart	1	0	1	6				
Potatoes.....	bushel	2	0	4	0				
Kidney.....	doz.	2	0	4	0				
Round.....	doz.	2	0	4	0				
Radishes.....	doz. bunches	0	6	1	0				
Rhubarb.....	bundle	0	0	0	0				
Salsaf.....	½ bundle	0	9	1	0				
Savoy.....	doz.	0	0	0	0				
Scorzoneria.....	½ bundle	0	9	1	6				
Sea-kale.....	basket	0	0	0	0				
Shallots.....	lb.	0	4	0	9				
Spinach.....	bushel	2	0	3	0				
Tomatoes.....	doz.	1	2	0	0				
Turnips.....	bunch	0	3	0	6				
Vegetable Marrows.....	doz.	0	6	1	0				

POULTRY MARKET.—SEPTEMBER 11.

BUT little trade. Partridges above the average price. There are many old birds, and the young are small. The supply of Grouse is falling off as the guns travel southward.

	s.	d.	s.	d.		s.	d.
Large Fowls.....	2	6	to	3	0		
Smaller ditto.....	2	0	2	6			
Chickens.....	1	9	2	6			
Geese.....	6	0	6	6			
Ducks.....	2	0	2	6			
Grouse.....	2	0	2	6			
Hares.....	0	0	to	0	0		
Rabbits.....	1	5	1	6			
Wild ditto.....	0	9	0	10			
Pigeons.....	0	10	1	0			
Pheasants.....	0	0	0	0			
Partridges.....	2	0	2	6			

WEEKLY CALENDAR.

Day of Month	Day of Week.	SEPTEMBER 19—25, 1872.	Average Temperature near London.			Rain in 43 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
19	Tu	Twilight ends, 8.3 P.M.	67.3	45.3	56.3	21	42 af 5	5 af 6	21 7	13 af 8	16	6 27	263
20	W		68.0	44.0	56.0	20	44 5	2 6	38 7	34 9	17	6 48	264
21	Th	17 SUNDAY AFTER TRINITY. Autumn commences.	66.4	45.6	56.0	24	46 5	0 6	0 8	53 10	18	7 9	265
22	F		66.4	44.7	55.6	21	48 5	58 5	28 8	after.	19	7 30	266
23	S		66.3	45.7	55.9	22	50 5	56 5	0 9	17 1	20	7 51	267
24	M		66.1	43.5	54.8	19	51 5	54 5	43 9	21 2	21	8 11	268
25	Tu		65.8	43.1	54.4	21	53 5	52 5	36 10	12 3	22	8 32	269

From observations taken near London during forty-three years, the average day temperature of the week is 66.6°; and its night temperature 44.5°. The greatest heat was 82°, on the 25th, 1872; and the lowest cold 27°, on the 25th, 1863. The greatest fall of rain was 1.21 inch.

AUTUMN-SOWN HARDY ANNUALS.

RECENTLY, in "Work for the Week," a reminder was given of the advisability of preparing for a spring and early summer display of this very easy-grown, cheap, and pleasing class of flowers. It is just one of those simple affairs of gardening to have these things to admire, that by its very simplicity is sometimes overlooked. There is nothing great and glorious and noble about annuals. Their cultivation does not demand any special display of skill and care in production. It is not in their nature to add any wreath of honour to those who grow them, or any particular renown to the gardens which they are made to decorate. They are not the stately plants, but the little twinkling stars of earth studded in chaste and quiet beauty, and they brighten up many a place otherwise dull or monotonous by lack of variety in habit or colour.

No, annuals are not rubbish; they are flowers interesting and attractive when afforded the trifling care and attention they demand. They are in truth rubbishy enough when the seed is thrown in heaps in the ground, and a hundred plants left to struggle in the space that would barely suffice for half a dozen. A practice so careless and unreasonable would be simply ruin to any class of plants, bring them into disrepute, and unjustly condemn them as unfit for that which in their very nature they are specially adapted to do—viz., to give beauty and pleasure. Annuals should have reasonable care bestowed on them or be let alone altogether. In many gardens and under particular systems of decoration plants of this class are not required, but in many others they may advantageously play an important part in the general display. In places where bedding-out must be completed at the earliest possible moment, annuals would be in the way, and would have to be cleared off when in the height of beauty, and this is always a disappointing proceeding.

There is only a limited number of annuals, limited in colour and variety, that are naturally over before the middle of May. Amongst these are the Forget-me-nots, but they must be sown in June, and the *Silenes*, which must be sown in August to be off in May. The same may be said of *Collinsia verna*, the little blue *Veronicas*, and the yellow *Lasthenia*. These, if sown early enough, may be cleared off in time for ordinary summer bedding, but it is now too late to sow them with that special end in view. Under another plan of summer bedding—the subtropical, the above, however, and many other annuals are the very plants to convert the dreary blankness of the garden in May and June into a scene of fertile beauty.

But in the mixed garden, where every week fresh blossoms are unfolding, autumn-sown annuals are most appropriate. Every year I can see what a great amount of pleasure these simple flowers are capable of affording. I know no time of the year when the garden is so attractive

and so generally admired as at the end of May and throughout June, when annuals may be said to form the staple display. Dazzling masses of Larkspurs and Clarkias, never so fine as when sown at this season; rich glowing groups of *Viscaria cardinalis*; and dense masses of Campanulas, especially *C. pentagonia* and *Venus's Looking-glass*, with floriferous tufts of *Saponarias*, *Lep-tosiphons*, and many others, including *Collinsias*, *Candy-tufts*, and especially *Nemophilas*. Such are never seen in full beauty except in the early summer months, and from seed sown now. They have a brightness, a robustness, and continuance that spring-sown annuals never possess. In all gardens where this class of plants can be fitly introduced, and they are not a few, they should be given a fair trial, and, in proportion to cost and care, not many things will return better interest for the outlay. I never yet saw the lady who did not admire greatly a garden in which these easily-grown plants were represented in spring and early summer, and I have heard many regrets that their cultivation is not more general.

With regard to the management, the first point to attend to is to sow the seeds at once. Every day's delay will at this date tell against their success. I generally put in mine from the 1st to the 16th of September, and have never yet failed in preserving a good stock safely through the winter. Indeed, there is no valid reason why annuals should perish any more than autumn-sown Cauliflowers, Lettuce, or Spinach; but who could expect these vegetables to survive if left standing thickly in the seed bed, each plant making the other tender by overcrowding, and inviting destruction by the vicissitudes of winter? It is so with annuals. They cannot survive the winter if left thickly together, but they will do so if thinned-out in time and sufficiently. This thinning is an all-important point, and if it cannot be attended to the seed had better not be wasted by sowing.

The position selected for the nursery bed for wintering annuals should, if possible, be sheltered from the full sweep of cutting winds. It should also be distant from old walls, shrubs, or vegetables likely to harbour slugs or snails. It is important that this be attended to. It matters little what the nature of the soil is so long as it is not light and rich, for if it is so, over-succulent growth will be induced. If it is made loose with the hoe and fine by the rake to the depth of an inch, that will be sufficient for every purpose. The seed should be sown in drills 9 inches or a foot apart, and covered very lightly according to its size. If the soil is not naturally fine, preparing a little and sowing it by hand from a basket over the seed will not be labour lost. When the seedlings are above ground run the hoe through them frequently, and keep slugs at bay; but, above all, thin-out in time, and let each plant stand separately. In very severe weather some *Asparagus* tops laid over them will be good protection, but the best protector is the snow, and the greatest enemies slugs and a neglect of thinning-out. The young plants may be planted in spring where required to bloom. They are sure to be attractive, and are within the reach of all

having a plot of ground to spare and a crown to spend.—
J. W., *Lincoln*.

WINTER-FLOWERING PLANTS.—No. 4.

MONOCHÆTUM ENSIFERUM.

This is a free-growing evergreen shrub, with deep rose and purple flowers produced from the points of the small twigs as well as the strong shoots. It is of erect pyramidal habit, and altogether of very neat habit. It succeeds admirably in a moderate-sized pot; a plant 2 feet high, and from 15 inches to 18 inches in diameter at the base can be grown well in a 7-inch pot, and one 15 inches high in a 4½-inch pot.

Monochætum ensiferum is one of many plants which require an intermediate house. In catalogues it is classed both as a stove and greenhouse plant, but treated as one of the latter with me it does not thrive; I therefore grow it in the stove. We will commence by putting in cuttings of the young growths in February or March, each about 3 or 4 inches long, with the base a little firm. They are inserted singly in small pots filled with a compost of equal parts of loam, leaf soil, peat, and silver sand, and placed in a close frame, or covered with a hand-glass in the stove. If the cuttings are kept in a bottom heat of 75° to 80° they strike root more certainly and sooner than without that assistance. I keep them in the close frame until the plants have grown 6 inches or more high, and the pots are full of roots; they are then hardened off, and placed in a light position in the stove, where they will have plenty of moisture and a moderate amount of air. Shift them into 4½-inch pots by June, and they will grow rapidly. A neat stick may be put in to keep the centre shoot steady and erect, and without further trouble they will become pyramids. If, however, irregular growth takes place the plants must be regulated by pinching, but not after July.

If all go on well the plants may have 6 or 7-inch pots from the middle of July to the beginning of August. The soil recommended for the cuttings will suit the plants, using it rather rough, and potting firmly. After the middle of September they should have no more water than will be sufficient to keep them from flagging, otherwise they can hardly be kept too dry, or have too light and airy a position. This will secure the thorough ripening of the wood, and in a temperature of 45° to 55° they will commence to flower in November—some later—and continue in good bloom for a long time. When flowering they need to be watered more freely than at other times, but are always impatient of heavy supplies, especially during the winter and spring months. After flowering they should be sparingly supplied with water; take off the requisite number of cuttings, and then prune-in moderately. When the fresh shoots are a few inches long repot the plants, encourage growth by giving an abundance of moisture and heat, and afterwards thoroughly ripen the wood by keeping them dry late in summer in a light and airy position. These plants will be larger than those from cuttings taken off early in spring, yet in my opinion they are seldom if ever so free in growth. *Monochætum ensiferum* is so liable to die off without apparent cause that I shall in future raise my plants from seed, as such are freer in growth, and otherwise superior to those from cuttings.

POINSETTIA PULCHERRIMA.

This is deservedly admired and extensively grown for its scarlet bracts, which from November to March are very useful for decorative purposes. It is one of those subjects which should be reared in quantity. It is most useful when it is grown dwarf, and in small pots.

Poinsettia pulcherrima is propagated in spring both by cuttings and eyes of the firm ripe wood after flowering, in either case cutting below the eye, and for eyes leaving about an inch of wood above, whilst a cutting will have two or more joints—I consider two sufficient. The eyes should be buried in the soil about an inch deep, and the cuttings inserted from 1½ to 2 inches deep in light sandy loam, on a hotbed of 75°. They should be kept no more than moist, and when they have rooted and are growing freely, withdraw them gradually from the hotbed, and put them singly in 4-inch pots. As the roots are very brittle, I insert the eyes and cuttings in 2-inch pots. This prevents any loss of roots in potting, and the young plants do not experience so great a check as by the other plan. After potting, the plants should be placed near the glass in a house where there is a moist growing atmosphere, and a temperature of 65° at night and 75° to 85° by day. The most suitable compost is light turfy loam two parts, one part each leaf soil or old decayed manure, and sandy peat, with a sixth

of silver sand. Drain well but not excessively, and water as required.

By the beginning of July the plants will require to be shifted into larger pots, which may be 6 inches in diameter, potting firmly. They must be stopped if they are expected to be dwarf; but this is the time when the cuttings for dwarf plants are put in, and I therefore mark for this purpose the shoots that would otherwise be stopped, and make cuttings of them. Commencing at the top of the shoot I count downward two joints, or from 3 to 4 inches from the growing point, and under the nearest leaf to that length of shoot I cut half way through with a sharp knife, and at every third leaf from this downwards a similar cut is made. These half-severed portions remain on the plant about a fortnight, when they are completely separated from it. Then all we have to do is to remove the lowest leaf, but even that I take off three or four days before separating the cuttings from the plant. They are inserted singly in small pots, 1½ to 2 inches deep, in very sandy loam, plunging them in a bottom heat of 75°, keeping them close and moist by covering them with a hand-light and shading them from bright sun. They will soon strike root, and when they begin to grow remove them from the hotbed by degrees, and admit air gradually. When somewhat hardened shift them into 4½-inch pots, employing the compost before named, and place them near the glass in a house with a temperature of 60° to 65° at night, and 70° to 75° by day, with a rise to 80° or 90° from sun heat. The atmosphere can hardly be too moist, only it must not be stagnant.

When the roots reach the sides of the pot shift the plants into 6-inch pots, well drained, and pot firmly, using the compost rather rough. Growth should be encouraged until the end of September, when the plants may have a drier atmosphere, and no more water than is sufficient to keep the foliage fresh. In all stages of their growth they cannot be kept too near the glass as long as they do not touch it.

After September the plants will succeed on a shelf in a house with a temperature of 55° at night, and when they are coming into flower, and the bracts begin to form, they may be watered with weak liquid manure. They will continue in flower from November, and will be succeeded by the plants stopped in July, which will be of taller growth, but have heads of bracts more numerous than those raised from summer cuttings. They have but one or at most two flowering shoots, which are produced by those cuttings put in with three joints. The plants propagated from cuttings or eyes in spring require to be kept growing until the close of September, and should then have a drier atmosphere. When in flower they continue longest in a temperature of 45° to 50°, but must be kept rather dry.

After flowering, the plants should be kept dry without allowing the wood to shrivel, and about the middle of March cut each shoot to within two or at most three eyes of its base; then water sparingly until the plants have broken, afterwards more freely. Turn them out of the pots, removing most of the old soil—in fact, all that comes away freely, and place in a size of pot that will just hold the roots, using very sandy loam for the first potting, and at subsequent pottings employing the compost before named. The plants will now succeed all the better if afforded for some time after potting a mild bottom heat and a close moist atmosphere, and will afterwards do well in a light and airy position. If bushy plants are wanted, the shoots ought to be stopped at every third or fourth leaf up to August, after which the plants should not be stopped but be kept in a light position with plenty of air, so as to insure a close firm growth. They may have larger pots in May and in July, if those in which they are growing are filled with roots; pot firmly at each potting in order to produce a stiffer and shorter-jointed growth. After the middle of September keep the plants rather dry, and treat the same as young plants.

Poinsettia pulcherrima needs no training, but it is not unusual to see long shoots bent round stakes, which in my opinion is ugly. A plant of this *Poinsettia* looks well on a trellis against a wall. Take care to plant it out in rich light soil, with abundant drainage, and, by cutting the shoots of various lengths, a wall of considerable height may be clothed from top to bottom. It needs, however, to have light, air, and dryness, and then the plant will produce its rich scarlet bracts for the greater part of the winter, when it is one of the finest objects that can be grown in the stove or warm greenhouse.—G. ABBEY.

LIQUID MANURE FOR ROSES.—My Roses this year are making most extraordinary growth, which is, I believe, partly to be

attributed to the following treatment:—A thirty-six-gallon cask is placed in a warm situation, and into this all chamber slops, together with the dirtiest of the laundry water, are poured. The mixture receives an occasional stir, and, fermentation commencing, ammonia is produced. Sulphuric acid is added to fix the ammonia before using the contents of the cask. A trench being cut in the earth round the Rose stock, the liquid is poured in. I have given a dose about once a fortnight.—F. CHESHIRE.

THE SALWAY PEACH.

THIS Peach, a native of Italy, can now be seen in great perfection in the gardens of Mr. J. Blyth, Woolhampton Park, near Reading, and any persons who entertain doubts as to the possibility of cultivating it successfully in this country are at liberty to visit the gardens, and I can promise them a hearty welcome from Mr. Colborne, the talented and courteous head gardener, who challenges the whole kingdom to produce a Salway Peach tree equal to that which has been the object of his care and attention for some years past.

The tree was planted some twelve or thirteen years ago in the open, but our atmosphere was not such as would allow of its fruiting, and some fruit-growers have been much prejudiced against it, alleging the fruit was woolly; but I think no objection against it can be urged as grown by Mr. Colborne, and a proof of its excellence is afforded by the fact that last year the Fruit Committee of the Royal Horticultural Society awarded that gentleman a first-class certificate for a dish of magnificent Peaches from the tree in question.

Mr. Colborne, finding the tree did not thrive out-doors, placed it under glass, and with such success that in no year since has it yielded less than from five to seven hundred Peaches, which have come to perfection after other varieties have disappeared. The tree presents a magnificent and wonderful sight, and has been greatly admired by a large number of visitors. The finest of the fruit weigh 12 or 14 ozs. each, and the estimated value of the yield this year is about £25. The leaves around the fruit were removed to admit the sun's rays, and the Peaches are of a splendid colour. In the same gardens the Sooly-Qua, or Chinese Cucumber, is growing to the length of 1½ yard, and this will be exhibited in the harvest festival trophy at the Crystal Palace.—G. COSBURN, *Newbury*.

[Our correspondent is in error in saying that the Salway Peach is of Italian origin. The seed was taken from a Peach eaten in Italy by Colonel Salway, but the tree is certainly an English production. We can confirm all the commendation our correspondent says on this excellent variety.—EDS.]

NOTES ON ROSES.

My old friend's Berkhamsted notes on Roses induce me to add again my mite. With us, in this bleak-spring country, that terrible May frost well nigh annihilated *Maréchal Niel*, and it certainly deprived us of nearly all the blooms. Cloth of Gold I have not even seen here this year, and my friend the Rev. E. Bartrum need not be surprised if he do not see a bloom on his for five or six years. Let it grow and well nigh cover his house, and then when eight or ten years old he will be repaid, possibly by abundance of bloom, but certainly by its beauty.

In our little Rose-growing town I fancy *La France* has this year been our most constant bloomer, excepting always glorious *Gloire de Dijon*, and the former is still steadily supplying us with flowers. As a late bloomer this year I have been particularly delighted with *Exposition de Brie*; it has been a truly magnificent Rose. Monsieur Noman, I saw in one of your notices of shows, has been splendid this year; with me it has not produced a single bloom that was moderately respectable, neither did it last year. *Emilie Hausburg* has perhaps charmed me more than any other Rose this year; it is a beautiful Rose, one that I think will please most growers. *Marquise de Mortemart* is a beautiful blush-white Rose. I am afraid it is tender and not very vigorous in growth, but it is a lovely Rose, and if Mr. Bartrum has not obtained it I advise him to try it. *Mdlle. Bonnaire* is also a beautiful light Rose; so is *Louise Magnan*, but the latter is very brittle, and I know no Rose which parts more easily with its branches when blown about by the wind. Miss Ingram is perhaps the largest white-blush Rose, of splendid form; but perpetual only in refusing to bloom but once, and then very shyly. *Madame Rothschild*

has not with me been nearly so good as last year, still it is a gem.

How long will a standard last? Certainly not seldom a score of years; but the Briar I fail to understand. Why two Briars, apparently fac-similes of each other, should, the one make a magnificent head, the other continue a sort of starved existence for two or three years and then slowly dwindle away, I know not. I fancy the summer Roses always do well on the Briar. Is this a fact? and if so, why? Tea Roses, again, prefer the Briar.

I am no radical, and therefore, although I should never vote for annual parliaments, yet I should vote for an annual "election" of Roses, such as the Rev. C. P. Peach kindly gave us last year. We have had new comers among the Roses this year, and perhaps some of those which last year stood high may this year lose their pride of place. I see a correspondent has suggested to Mr. Peach to undertake the same duty now for Strawberries as he did last year for Roses. Perhaps it may be too much labour to be returning officer for both Strawberries and Roses; and I can only say that if this is the case, and no worthier "R. O." can be found for Roses, I will willingly try to do it.—JOSEPH HINTON, *Warminster*.

HORTICULTURE POPULARISED.

Few things are more interesting in a gardening point of view than to see the efforts that are being made, in the several districts of Britain, to extend the pleasures and benefits of horticulture among the great mass of the people. It is with the fruits of the earth as with various branches of commerce and trade, nothing is so well calculated to bring them to perfection as friendly rivalry and a spirit of emulation amongst the workers, impelling them to increased effort in the production of better results than have been attained before. If this is true in respect to handicrafts, it is especially so in respect to gardening as confined to amateurs, artisans, and cottagers, because it can be prosecuted in addition to the bread-winning vocation, and may afford profit, as it certainly will pleasure, as well as add to the comfort and contentment of home. It is surely well to seek to encourage, by every possible means, such home pleasures as even the humblest garden may be made to afford, as it has a direct tendency to counteract the indulgence in coarser and less creditable means of recreation. It is a recognition of this principle that many gentlemen interest themselves in providing the means of helping their dependants to help themselves to the enjoyments which are inseparable from the horticultural fêtes which are instituted around their mansions and in their parks. There is no class of men who have done more to originate and spread a love of horticulture and kindred exercises amongst those by whom they are surrounded than the clergy of the Established Church. In dwelling on this subject names familiar will occur to our minds, as "*D., Deal*," Revs. S. R. Hole, Radclyffe, Lea, and "*WILTSHIRE RECTOR*," men who by purse, and pen, and example have left their mark on the times; and to these we must add the efforts of another in the same direction, the Rev. "*C. C. E.*," of Bracebridge, whose success is so remarkable as to be special and to demand chronicling for the encouragement of others.

Four years ago this gentleman, by the assistance of four friends, raised £6, and established a little cottagers' show for vegetables. This year he has had the assistance of some three hundred friends and nearly £200, and the show, in a village of perhaps four hundred souls, was visited by ten thousand people, including the Mayor and Corporation of the adjacent city. Is not this sufficiently remarkable to be special, and to be excused notice in the columns of this Journal? The exhibition has outgrown its original bounds, and is not done growing yet. The open classes had competitors far and near, the ten-guinea fruit class eliciting a splendid response, eleven grand eights of splendid quality being set up. In the plant department a special feature was noticeable and worthy of record. Lacking large-specimen exhibitors, a happy idea occurred to the Hon. A. L. Melville to propose a class for little men and little plants. It started rather poorly in the city show, but has culminated into something really good and interesting. It is the arrangement of plants for effect in spaces of 6 feet by 6. These collections were tastefully arranged and exceedingly attractive, and the hint may be useful for others not having large plants. Besides the flowers, fruit, and noble vegetables, the Grenadier Guards' band and the Crystal Palace pyrotechnist lent their invaluable aid; and the indefatigable committee—for "*C. C. E.*"

would not like all the honour—may well be satisfied. I have yet something else worth telling. In all this company, ten thousand strong, there was no drunkenness, quarrelling, or disturbance of any kind, but all was orderly, lawful, and respectable. Could this be the case in any week-day pleasure gathering under any other than garden auspices? This show has now been visited, amongst others, by the following notabilities in the horticultural world—the Revs. C. P. Peach and S. R. Hole; Dr. Hogg, and Mr. Pearson; and amongst gardeners by Messrs. Speed, Miller, Tillyard, Gardiner, and—J. W., Lincoln.

SOWING HERBACEOUS CALCEOLARIA SEED.

At one time I grew these Calceolarias largely, as I liked them for furnishing a gorgeous display in the spring months—say up to June, for in summer they will not flower much unless you can afford them a cool moist atmosphere, or at least coolness and moisture at the roots. I used to subdivide and propagate them early in a cool shady place; but treat them as you may, they require much trouble, and I only did so to keep what I considered superior varieties. I prefer, on the whole, sowing seed instead of propagating by cuttings, and for amateurs there is a never-failing pleasure in watching the opening of every seedling, and if there should only be a few first-rate kinds the others will come in usefully as cut flowers. For such purposes the seed may be sown at any time; but keeping the ideas of moisture and coolness in view, I think the best time to sow is from the end of July to the second week of September. All who have sown the seed know that a pinch like a pinch of snuff will contain great numbers of seeds—hardly any seeds could be smaller; and the reason the seedlings do not come up more thickly than Mustard and Cress is simply that the small seeds are buried and cannot vegetate before they come in contact with the air. They require more nicety in sowing than even the smallest-seeded Lobelias.

Another reason why many a half-crown or crown's worth of seed proves a failure is the careless mode of watering the seed pot. With many of these small seeds it is well not to water at all until the little seedlings have attained some size.

If one is about to sow in 5 or 6-inch pots, the pots should be drained, then filled to within an inch of the top, first with rough soil, then with some a little finer, and lastly with the finest of all. The soil in the pots should be thoroughly soaked and left for a day, so that the surface may be just a little dry; pat that down with a circular board, and if the surface is not smooth enough scatter a little dry sand over it; then sow, and just sprinkle a dusting of sand—not more than a dusting—over the seed, press slightly with the circular board again, and place the pot under a frame or hand-light, if plunged all the better, putting a square of glass over the top, and shading. Any moisture the little seedlings may require before they are strong will be better given to the plunging material outside of the pot instead of watering them overhead, however carefully. Such little matters of detail attended to with these and similar small seeds, would be an instructive source of pleasure to many, and would save seed-dealers from blame that ought rightly to be placed on the shoulders of the sower and not the seedsman.

If, independently of these precautions, a seed pot should want watering, then never apply the water overhead with a rose, but take the pot or jug in your hand, place a bit of broken pot, oyster shell, or a piece of wood or slate against the inside of the pot, pour the water on that until the surface of the pot is flooded all over—that will never injure the smallest seedlings. Water overhead with a rose, and three-fourths of the little seedlings may damp or shank off before night. I am not learned enough to tell you the cause of the difference, but the fact I well know; and the fact must be acted upon if we wish to achieve the greatest amount of success, and more especially with dust-like seeds.—R. F.

LARGE ONIONS.—By the Journal of the 5th inst. I see the weight of twelve Onions which took the prize at Banbury was 15 lbs. To-day I have weighed twelve bulbs of the Giant White Tripoli Onion, which turned the scale at 19 lbs. 9 ozs., three of the largest weighing 5 lbs. 12½ ozs. All had been dried in the sun, and must have been out of the ground fully a week. The largest when dug-up measured 20 inches in circumference, and the smallest to-day 16½ inches. The seed was sown under protection on the 6th of February last. Owing to the season having been so wet, the tops of the Onions

became affected by mildew. This being my first trial, I look for a still better result in a drier summer.—W. W., Hertford.

GRAFTING.—No. 11.

Fork-grafting the Beech.—In this case the graft (A, fig. 1), is fitted upon the stock at the meeting point of two branches

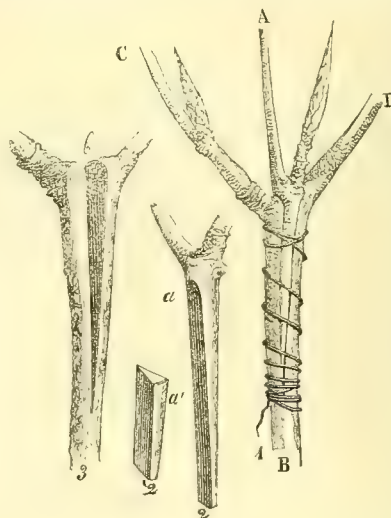


Fig. 1.

by means of a cut, *a*, formed by the gradual thinning away of the wood on one side, until it assumes the wedge-like shape shown at *a'*. The graft is then slipped into a cleft in *B*, which does not extend beyond two-thirds of the diameter of the stock, and where, although held tightly, it must be further secured by binding and waxing. If, instead of a cleft, an opening such as that represented at *b* is made, the work will become much more complicated without increasing the probabilities of success.

At first the branches *c* and *d* may be allowed to remain somewhat long, but should be shortened as the graft increases, so that the two snags can be taken off in the following autumn, the grafting having taken place in the spring during the months of March or April. The Oak can also be fork-grafted in this manner. For a long time M. P. de Martillet multiplied the American Oaks upon stocks of the European ones by this means. We have succeeded in doing this with the European and American Walnuts. Perhaps the Chestnut and other hardwooded trees would equally admit of being grafted in this manner.

Simple Splice-grafting (fig. 2).—Next to budding, the simple

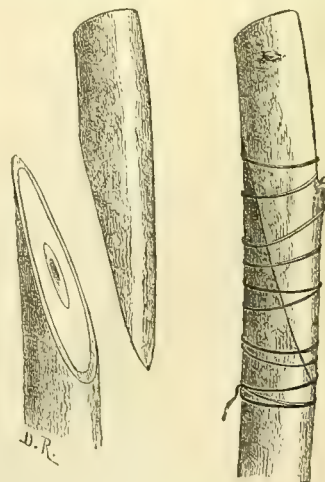


Fig. 2.

English splice-grafting is the best for the Apricot. The stock

and the graft should be of equal diameter, and cut in a sloping manner without the slightest notch, in order to avoid the danger of gumming, which is always fatal to the union. The two portions are made to coincide as perfectly as possible, when it becomes a mere question of simple graft-application.

We give (fig. 3), an example of another mode of grafting. On comparing it with the work of a carpenter, we might call

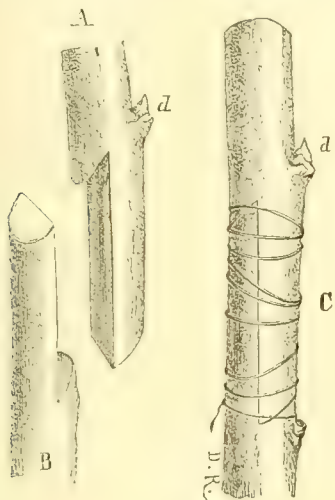


Fig. 3.

it morticed. Being a firm arrangement it offers a double security by the oblique notches of the graft A, and of the stock B, which are finally united as at C. We have cut the slope of the graft opposite a bud, d, which serves to draw up the sap, and form cambium to cement the graft.—BALLET, *L'Art de Greffer*.

SPORT OF GLOIRE DE DIJON ROSE.

At the Bracebridge Horticultural Show, held last week, we saw a specimen of Gloire de Dijon Rose exhibited by Mr. A. Kemp, gardener to Rev. J. Brooke, Haughton Hall, Shiffnal, which has sported most effectually from its normal state. The Rose was struck about four years ago as a cutting, and is now growing on its own roots in ordinary garden soil, which has never been manured or disturbed in any way since the tree was planted. Previous to this year the flowers have been of the ordinary colour, but this year they have come of a salmon rose, altogether different from the original. If Mr. Kemp propagates this new form by budding, we have no doubt he will secure a new variety to the Rose garden. This occurrence is similar to what has frequently taken place in zonal Pelargoniums, and may also be illustrated in Roses by Bessie Johnson and Climbing Devonians, both of which are sports.

DOUBLE PELARGONIUM JEWEL.

On a recent visit to Stamford I paid a visit to Mr. Laxton's garden, which has now become famous by the successful results of his hybridising, especially amongst Peas and Pelargoniums. Although I am interested in the former, I am still more so in the latter, and was greatly pleased to see how well his perseverance and judgment have been rewarded. The most remarkable gain in doubles is one which he has named Jewel, and which has already received a first-class certificate from the Royal Horticultural Society. The great charm of the flower is the remarkably double form of each pip. Mr. Laxton compares it to a miniature Sénateur Vaisse Rose, and it is really no inapt illustration. It will be of immense value for the purpose of button-hole bouquets; the pips being tied separately on wire will look very charming. The habit of the plant is dwarf, and it blooms very freely. Altogether I consider it a great acquisition.—D., Deal.

FAILURE OF THE FRUIT CROP.

In almost all gardening publications I see it is taken for granted that the frosts of last spring are the sole cause of the

failure of our fruit crop. My own impression is that there is another cause for this failure, and that is the imperfect ripening of the young wood last year; when the chief growth of new wood, owing to the cold weather in June, was chiefly made at the end of the summer. So impressed was I with the idea that this imperfect ripening of the wood would be prejudicial to the fruit crop of this year, that I mentioned it to my friends, and also took the precaution to root-prune last September a row of dwarf trees. The result has been that the Pear trees thus treated are full of fruit, while on my other fruit trees, with the exception of two old Pear trees which have been fresh grafted lately, I have scarcely any fruit.—G. M.

MISCELLANEOUS NOTES AND QUERIES.

LAST year a Melon produced both red and green-fleshed fruit here from the same plant. The sort was called the Denbies Green-fleshed.

Upon the whole, greenhouse cultivation is best for *Ismene calathinum*. Grow the bulbs singly, use moderate-sized pots, never allow them to form clumps, or even doublets, if you can help it. For soil employ light loam, with a little rotten hotbed manure. Give a slight shift about midsummer, or, indeed, as soon as the pot is getting full of roots. Keep on growing to the last moment, whether the plant has flowered or not. Keep the plant perfectly dry in winter. Pot early in the spring, shaking every particle of soil from the roots. Get the right sort; there is an inferior one in the trade under the name of undulata. Is the true yellow *Amancaes* in the trade, or is it not?

Pancratium illyricum is as hardy as a Daffodil, and should be grown out of doors under the commonest hardy bulb treatment.

Ismene calathinum may be grown out of doors to bring on spare offsets, but the bulbs do not flower satisfactorily. I have grown very fine bulbs thus in warm summers, but the best plants should be grown under glass to get ripe bulbs, and so insure success. The curious and beautiful *Elisena* succeeds under exactly similar treatment.

Is the variety of *Magnolia grandiflora* called *præcox* to be had in these days?—R. J. C.

ROYAL HORTICULTURAL SOCIETY.

SEPTEMBER 18TH.

THE subjects specially invited on this occasion were neither numerous nor remarkable for high quality; but of those submitted to the Floral Committee many were of high quality. On the whole the exhibition in the Council-room sustained the interest of the fortnightly meetings.

In Class 1, for the best twelve double Zinnias, the prizes went to Mr. Porter, gardener to Mrs. Benham, Isleworth; and to Mr. A. Donaldson, gardener to W. E. Barry, Esq., Norwood Green, Southall. Stocks and Pentstemons, which formed the subjects of exhibition in the next two classes, were not equal to our expectations. Mr. Rowe, gardener to Mrs. Lewis, Roehampton, was first for Stocks; and Mr. Donaldson second. The only exhibitor of Pentstemons was Mr. B. Porter, who was awarded a first prize. He was likewise the only exhibitor of *Helichrys* and feathered *Celosias*. For the former the prize was withheld, for the latter a third prize was given. For six fine-foliaged Begonias the prizes went to Mr. Walker, gardener to H. J. Atkinson, Esq., Gunnersbury House, Acton, and to Mr. Farrow, gardener to G. Batters, Esq., Enfield. In both cases the specimens were very well grown and in excellent condition.

Prizes were offered for the best dishes of Dessert Apples and Pears. For the former, Mr. E. Clarke, gardener to J. K. Hall, Esq., Sutton, Surrey, was first, and Mr. W. Earley, the Gardens, Valentines, second, with Ribston Pippin. The other varieties chiefly shown were Summer Golden Pippin, Wyken Pippin, and King of the Pippins. For Dessert Pears, Mr. A. Donaldson was first with Marie Louise; Mr. J. Stephenson, gardener to F. C. Barker, Esq., Leigh Hall, Essex, second, with Beurré d'Amanlis. Louise Bonne of Jersey, Jersey Gratioli, and Williams's Bon Chrétien were the principal other kinds.

The best collection of Tomatoes came from Mr. Pagnell, gardener to G. D. W. Digby, Esq., Castle Gardens, Sherborne, the second best from Mr. Porter, Isleworth. Earley's Defiance, Orangefield, Trophy, Red and Yellow Cherry, Pear-shaped, and Large Yellow were well represented. Mr. George and Mr. Roberts, Holwood, Keston, Beckenham, also exhibited.

Messrs. Barr & Sugden, of Covent Garden, offered a prize for the best assortment of typical forms of Beet, not less than ten varieties, which was taken by Mr. Pragnell. Henderson's Dwarf Waterloo appeared to be the best flavoured, but the whole of the

samples were only half-baked. Beet is now consumed to a greater extent than in former years, and for culinary purposes flavour rather than bulk of produce must be looked to. Dell's Crimson, or Osborn's, as well as the Egyptian Turnip-rooted, the former an excellent coloured-foliaged plant, the latter useful for shallow soils, appeared to be of good flavour, and on that account alone desirable, setting aside their other recommendations, but the bad cooking spoilt all. Mr. Donaldson exhibited a good collection, also Messrs. Veitch, not for competition, as well as some others.

For Messrs. Barr & Sugden's prizes for typical forms of Cabbages (exclusive of Savoy), Mr. Farndell, 6, Buckingham Villas, Park Road, Birmingham, exhibited a collection grown on the Corporation Sewage Farm, including fine examples of the St. John's Day, Fearnought, Atkins' Matchless, Enfield Market, &c. Mr. Donaldson also exhibited.

Messrs. Carter & Co., of High Holborn, offered prizes for three dishes of Beet, to include Carter's Perfection of Beets, and six dishes of Onions, to include the New Giant Rocca, New Giant White Tripoli, and New Red Italian Tripoli. Mr. Pragnell was first with the stipulated kinds—Lobjoit's and Osborn's Beet; of Onions, James' Keeping, Giant Madeira, and Sherborne Improved, apparently a well-selected White Spanish. The Onions were remarkably fine. Mr. W. Cross, gardener to J. B. Lousada, Esq., Sidmouth, was second.

FRUIT COMMITTEE.—G. F. Wilson, Esq., F.R.S., in the chair. Thomas Laxton, Esq., of Stamford, by direction of the Committee of the Stamford Horticultural Society, sent collections of about eighty varieties of Apples and thirty of Pears, which had been exhibited at a recent exhibition of the Society at Stamford. These had been collected from the districts about Stamford, Oakham, Kingscliffe, and Market Deeping; the two former from the oolite, and the latter from the fens. These were of considerable interest, and an unanimous vote of thanks was given to the Stamford Horticultural Society. Mr. Peasgood, of Stamford, sent a seedling Apple of great beauty and merit. It is large, round, and handsome in shape, partaking of the appearance of Cellini and Blenheim Pippin. It is said to be a culinary variety, but in all probability when perfectly ripe will not be unworthy of the dessert. The fruit was named Peasgood's Nonsuch, and received a first-class certificate. The following letter was received from Mr. Peasgood:—

"Mr. A. F. Barron.

"Stamford, September 16th, 1872.

"DEAR SIR,—Acting upon the advice of the judges at the horticultural show recently held here, I have forwarded for your inspection a sample of Apple grown in my own garden. You have, I believe, already had the Apple brought under your notice by Mr. Laxton, and he will now state that he has examined the tree, and is convinced of its being a seedling. A pip was planted in a flower-pot either eighteen or nineteen years ago at Grantham, Lincolnshire; after being for some time raised in-doors, it was there put into a garden, and about seven years ago removed to Stamford. Last year it bore one large Apple only one, this year it had eleven all equal in size to those sent. You will notice they were pulled before ripe, this was to exhibit them at the show here a fortnight ago. The large decayed one was eaten when upon the tree, and is sent to show the original size, though it has somewhat shrunk. I think you will pronounce the flavour as being very fine. Mr. Laxton told me particularly to mention that it is a standard tree. I have enclosed two Apples of another tree, and should be much obliged if you will kindly give me the name. The leaves in the box are off the seedling.—I am, dear sir, yours obediently, J. F. PEASGOOD."

Mr. J. Gardner, Elsham Hall Gardens, Lincolnshire, sent a seedling Melon, raised between Bromham Hall and Bodorgan Orange, but it was very deficient in flavour, as were also those sent by Mr. Mundell, The Gardens, Beechwood Park, Tonbridge Wells, and Mr. E. Rowe, The Rookery, Roehampton. The latter gentleman sent a seedling Apple, which is small, and not possessed of any merit. Mr. J. Clarke, Lower Grove House, Roehampton, sent some bunches of the Aleppo Grape, a variegated variety, producing black and white, and occasionally striped berries on the same bunch. Mr. F. Dancer, of Chiswick, brought fruit of Autumn Paradise Pear and Belle de Septembre Pium. The former is a Pear of considerable merit, and being generally an abundant bearer, is worthy of more general cultivation. The Plum is of great beauty and excellent in flavour.

Messrs. Osborn & Sons, of Fulham, exhibited a dish of the White Wax Runner Bean, a variety which is from its earliest growth of a pale cream colour. It is the Haricot d'Alger of the French, and one highly deserving of general cultivation, as it is neither "stringy," nor has it any lining in the pods; it is, therefore, eaten entire. A first-class certificate was awarded to it. Mr. John Reid, of Haigh Hall Gardens, Wigan, sent two large fruit of Passiflora quadrangularis, to which a cultural commendation was awarded. Mr. Charles Noble, of Bagshot, sent fruit of Lagenaria vulgaris, or Club Gourd, under the name of Asmah Vegetable Marrow. The fruit was upwards of 3 feet in length, and Mr. Noble stated that he had grown it upwards of 4 feet long.

Mr. W. King, gardener to J. Baum, Esq., Cremorne Gardens, Chelsea, showed a dozen plants of Black Hamburg and six of the Trebbiano Vine in pots, which received a cultural commenda-

tion. The Committee then inspected a Tomato, called Hathaway's Excelsior, grown at Chiswick from seed brought from America. It is a very early and prolific variety, the fruit perfectly round like an Apple, and the leaves curled, and to all appearance in a withering condition, though perfectly healthy. Although perfectly satisfied with it, the Committee determined that it had better be subjected to another year's trial to watch the effect produced by the change of climate.

FLORAL COMMITTEE.—Dr. Denny in the chair. Messrs. Standish & Co., Ascot, sent a number of Rhododendrons to show the varying results produced by hybridisation. In one set R. Aucklandii Griffithsii was used as the female parent, and was crossed with R. cinnamomum Cunninghamii, also with R. Leviathan, giving rise to two very distinct races, one being much dwarfer in habit than the other, while the colour of the shoots was also different—in one case yellowish green, in the other red. Another set of seedlings were the result of hybridising R. Blandyanum (the seed-bearing parent) with R. Thomsoni, and in this case the pollen parent was reproduced almost without difference. Messrs. Standish also sent baskets of Bouvardia Vrelandii in fine bloom; the plants in one basket had been grown out of doors and were blooming profusely, exhibiting, however, a slight pink tinge. From the same firm came also Acanthopanax variegata, with ornamental yellow-variegated foliage; the plant, moreover, has the merit of being hardy. From Mr. A. Parsons, gardener to W. J. Blake, Esq., Danesbury, Welwyn, came a very fine Achimenes called Rosy Circle, with six or seven divisions in the flower instead of the ordinary five. Mr. J. Stevens, gardener to C. J. Boyd, Esq., Cheshunt, exhibited a seedling scarlet Verbena named Prince of Wales, which received a first-class certificate as a good bedding variety.

From Messrs. J. & C. Lee, Royal Vineyard Nursery, Hammersmith, came shoots of Cornus mascula aurea elegantissima, with the leaves beautifully variegated with golden yellow, and, further, diversified with rose—a first-class certificate was awarded. Mr. J. Croucher, gardener to J. T. Peacock, Esq., Sudbury House, Hammersmith, had first-class certificates for Agave striata Richardsii, a handsome kind, with narrow bluish green leaves, and A. Gilbyii, with thick deep green leaves striped with light green, and having hooked brown or grey spines. Both are natives of New Grenada. Messrs. Dick Radcliffe & Co. sent Pyramid and Dwarf Compact Mignonette; and Mr. Porter, gardener to Mrs. Benham, Isleworth, Pelargonium Prince Charlie, a large-flowered scarlet variety.

From Mr. Walker, gardener to H. J. Atkinson, Esq., Gunnersbury House, Acton, came an excellent specimen of Eucharis amazonica. Mr. Burnett, gardener, The Deepdene, Dorking, sent a flower of Funkia alba. Messrs. Cripps, Tunbridge Wells, exhibited Clematis Viscount Neville, dark velvety purple with a somewhat brighter band; also Duke of Edinburgh, dark violet. Mr. P. Grieve, Culford Hall Gardens, sent cut specimens of a hybrid bronze Ivy-leaved Pelargonium called Dolly Varden.

Messrs. Veitch, of Chelsea, contributed a collection of plants, including two finely-coloured specimens of Amaranthus salicifolius, Cypripedium Maulei with two fine blooms, the hybrid Cypripedium Dominii, and Cattleya Devoniensis, Maranta olivaris with very handsome leaves, varieties of Hippeastrum pardinum, and Bowman's variety of Odontoglossum Alexandræ. Messrs. E. G. Henderson & Son, Wellington Nurseries, St. John's Wood, sent a handsome Asplenium bulbiferum, which received a first-class certificate; cut flowers of Zephyranthes carinata, bright rose, very pretty, and of Antirrhinum majus Hendersoni, white, edged with purple, and tinged with yellow. Mr. Wilson, gardener to W. Marshall, Esq., Enfield, exhibited a plant of Amaranthus salicifolius, with pale sulphur-coloured leaves; it had been kept in shade in the stove, and afterwards placed in a greenhouse. Mr. Wilson received a well-deserved cultural commendation for a noble specimen of Platycerium grande 5 feet 6 inches in diameter, also a cultural commendation for a fine example of the Stag's Horn Fern, Platycerium stemmaria. Mr. Wilson also exhibited pans of seedlings of both species. From the Society's garden at Chiswick came a plant of Coleus Baroness Rothschild quite 3 feet in diameter, and though only in a 48-pot it had never rooted through the hole in the bottom. Mr. C. Noble, Sunningdale Nursery, Bagshot, sent a collection of cut flowers of Clematises to show their autumn-flowering properties. Mr. Eckford, gardener to the Earl of Radnor, Coleshill, exhibited several seedling Pelargoniums, of which Countess of Radnor had large trusses of scarlet flowers with a slight tinge of magenta.

Mr. Turner, Royal Nurseries, Slough, exhibited a number of seedling Dahlias. First-class certificates were awarded for Laura Haslam, which also received a like award at the Crystal Palace and Glasgow, primrose tipped with white; for Prince Arthur, rich yellow; Nelly, cream tipped with lilac purple; Arbitrator, fawn with a yellow base. A second-class certificate was given for Miss Bateman, pale yellow slightly tipped with orange. Herbert Turner, pale blush, was also a finely formed flower. Mr. Turner likewise exhibited a fine stand of established varieties. Mr. Eckford had first-class certificates for Dahlia

Queen's Messenger, rich purple; Cremorne, yellow tipped with brownish red, very effective; and Walter Reid, purple, with a magenta tinge. Mr. Eckford likewise sent a stand of Verbenas, in which Mrs. Lewington was very fine, but had before received a certificate. Mr. King, gardener to Rev. J. S. Wiggett, Allanby Park, Binfeld; Mr. Rawlings, Romford, and Mr. G. Wheeler, Warminster, exhibited seedlings. From Mr. Turner, Slough, and from Messrs. E. G. Henderson came stands of bouquet Dahlias; those from the former were remarkably fine.

The Rev. H. N. Ellacombe, Bitton Rectory, sent specimens of the Jalap plant, *Exogonium Purga*, in bloom, but which did not arrive until after the Committee meeting was over. In a note which accompanied them he remarked that the plant had a special interest, inasmuch as it had flowered out of doors with him for five years, without any protection—not even that of a wall, yet from the beauty of the flowers it well deserved protection. The flowers, he stated, are short-lived, but there is a constant succession of them. The plants die down at the first frost, and do not come up till the frosts are well over.

GLASGOW AND WEST OF SCOTLAND HORTICULTURAL SOCIETY'S SHOW.

SEPTEMBER 11TH, 12TH, AND 13TH.

THIS, the first great international Show of fruits, plants, flowers, and vegetables of the Society, may be considered, as a whole, the finest and largest ever held in Scotland. Taking the classes individually, the display of fruit was by no means so fine as that exhibited in Edinburgh in 1869, the most unfavourable season, incessant rains, and absolute want of sunshine, being anything but conducive to highly-finished fruit. Grapes were shown most extensively; small fruits were also of good quality. Mr. Fowler obtained the most prizes for Grapes, his fruit showing signs of excellent cultivation. Mr. Hunter's Grapes were all large fine bunches, and exceedingly well finished. Mr. Johnston exhibited in a most creditable manner. The fruit was arranged along two long tables in the centre of the Hall, where it was seen to great advantage. The magnificent collections of plants contributed by the London, Glasgow, and Edinburgh nursery-firms constituted the largest body of the Show, and all contained specimens of very rare plants, arranged in the most artistic and striking manner. Messrs. Veitch & Sons exhibited many new plants of great interest.

The weather on the first day did not prove an exception to its usual character, heavy showers in the morning and continuous rain in the afternoon rendered it most unfavourable for visitors; notwithstanding this there was quite a large and fashionable attendance.

Though plants were shown in such number and fine condition, still, in point of public interest and attraction, they were of an order inferior to that attributed to the fruit; therefore, dealing with the two divisions in the order of interest, we first come to the fruit.

For the collection of twenty sorts of fruit there were only two competitors, Mr. Johnston, gardener to the Earl of Strathmore, Glamis Castle, and Mr. Ingram, gardener to the Duke of Northumberland, Alnwick. Mr. Johnston gained the first place with a very fine group of excellent fruit, comprising Black Hamburg Grapes; Golden Champion in splendid condition, berries large in size, quite ripe, and finely finished; Buckland Sweetwater; Black Prince; handsome Muscat of Alexandria; Duchess of Buccleuch, a Grape of fine flavour when ripe; a beautiful cluster of Bananas (*Musa Cavendishii*); Golden Perfection and Lord Strathmore's Favourite Melons; Stirling Castle, Noblesse, and Royal George Peaches; Duc de Telliers, Elruge, and Pitmaston Nectarines; Green Gage, Victoria, and Jefferson Plums; a punnet of Cape Gooseberries, and two small Queen Pine Apples. Mr. Ingram's second-prize collection contained a finely swelled Smooth Cayenne and Queen Pine; Mrs. Pince's Black Muscat Grape; Black Morocco; Lady Downe's, fine in colour; Black Hamburg, Muscat of Alexandria, and Muscat Escholata [*Muscat of Alexandria*] Grapes; Prince of Wales and Queen Emma Melons; Royal George and Barrington Peaches, good; Jargonelle Pears; Moor Park Apricot; Nectarines; Plums in variety; Apples, &c.

In the collection of sixteen sorts, Mr. Bain, Downton Hall, Salop, was first; his bunch of Buckland Sweetwater was the finest in the room. Madresfield Court, Muscats, and Hamburgs were especially fine; these with Queen Emma Melon, Walburton Admirable and Noblesse Peaches, Morello Cherries, and assortments of Nectarines, Pears, and Plums formed the principal. Mr. Temple, gardener to J. Balfour, Esq., Balbirnie, was second with excellent Muscat Hamburg, Muscat of Alexandria, Black Hamburg, and Royal Vineyard Grapes; beautiful Brown Turkey Figs, Violette Hâtive and Noblesse Peaches, Nectarines, Plums, Pears, Apples, and a Trentham Hybrid Melon. The third prize was awarded to Mr. Dickson, Mount Melville, St. Andrews, Fife.

Mr. Cummings, gardener to the Earl of Wemyss, Amesfield,

Haddington, was first for twelve sorts of hardy fruits; he had some very nicely coloured Peaches, also good Pears and Plums. Second came Mr. Brunton, Gilmerton, Drem; and Mr. Crosbie, Luss, was third.

The principal prize for Grapes, and that which created the most interest amongst Grape-growers, was for the eight bunches of eight varieties, which was keenly contested. Mr. Hunter, gardener to the Earl of Durham, Lambton Castle, gained the first place with splendid Black Alicante, Golden Champion, cut from a plant growing on its own roots, fine Black Hamburg and Barbarossa [*Gros Guillaume*], grand Muscat of Alexandria, Calabrian Raisin, Trovère Frontignan, and Burchardt's Black Prince, all finely finished, and bearing the stamp of good culture. Second came Mr. Fowler, Castle Kennedy, Stranraer, with Muscat Hamburg, Muscat of Alexandria, Victoria Hamburg, Lady Downe's, Muscat Escholata, Alicante, Trebbiano, and Barbarossa. Third came Mr. Johnston, Glamis, with Buckland Sweetwater, Black Hamburg, Royal Muscadine, Alicante, Black Prince, Muscat of Alexandria, Oakley Park, and a much superior bunch of Golden Champion than that which he showed in his large collection, in a most perfect state of maturity.

For four bunches of Grapes Mr. Loudon, The Quinta, Salop, was first with fine examples of Muscat Hamburg, Black Hamburg, Black Prince, and Muscat of Alexandria. Second, Mr. Bruce, Chorlton-cum-Hardy, Manchester. Mr. Fowler was first for Muscat Hamburg, with a very handsome exquisitely finished bunch. Mr. Dickson, Mountlivil, Fife, was second.

For two bunches of Black Hamburg Mr. Fowler was placed first with small bunches, but finely finished. Mr. Boyd, Oaklea, Galashiels, was second with two compact bunches, large in berry, and quite ripe. Third came Mr. Johnston. For two bunches of Muscat of Alexandria, Mr. Ross, Eccles, Thornhill, Dumfriesshire, was first with very nicely-formed bunches, beautifully coloured, and in fine fresh condition. Mr. Johnston was second with two larger bunches, but not quite ripe. Third came Mr. Fowler. With two bunches of Black Lady Downe's Mr. Fowler was first with large bunches and berry for that variety. Mr. Smart, Netherard, Dolphinton, Peebles, was second; and Mr. Fraser, Stobo Castle, third. Madresfield Court Muscat Grape was shown in fine condition—long, well-formed bunches, with good colour and bloom—by Mr. Hood, Glasslough, Armagh, Ireland. Mr. Boyd was first for the single bunch of Hamburg, Mr. Fowler, second, and Mr. Irvin, Herronhill, Hawick, third. Mr. Boyd was also first for one bunch of Black Alicante, which was large in size, and fine colour and bloom; Mr. Craig, Glen Huntley, Port Glasgow, second; and Mr. Dickson, gardener to J. Jardine, Esq., Arkleton, was third.

Mr. Thomson, Tweed Vineyard, Galashiels, gained the first prize for one bunch of a new Grape with an extraordinarily fine example of his new Grape, the Duke of Buccleuch. Second, Mr. H. Moncer, Rockfield, Dundee, with Mrs. Pince's Black Muscat; third, Mr. Smith, with the same variety.

Mr. Johnston had a first prize for Buckland Sweetwater, showing a bunch excellent for size of berries and colour; second came Mr. A. McIntire, Partick; and third, Mr. George Reid, Blackness Terrace, Dundee. Mr. Dickson, Arkleton, was first for the heaviest bunch of white, showing an enormous bunch of Syrian, weighing no less than 19 lbs. 5 ozs.; it was not quite ripe, but sufficiently so for the purpose. Large bunches do not create so much interest at the present time as they did some years ago, when Mr. Fowler exhibited his large one bordering on the same weight. Mr. Fowler was second on this occasion with White Nice, weighing 14 lbs. For the finest-flavoured white Grape Mr. Bruce was first with Muscat of Alexandria; many of the berries were assuming a very raisin-like character. Second came Mr. Brown, Abercainey, Crieff, with Chasselas Musqué; and third Mr. Shaw, Donisla House, Newington, Edinburgh, with a nice bunch of Muscat. For one bunch with the finest bloom Mr. Bruce was first with Alicante; Mr. Low, Hill Park, Bannockburn, second.

In the class for the best collection of Muscats Mr. Fowler was first with some good examples of the Tynningham, Bowood, Escholata [*Muscat of Alexandria*], and Muscat Hamburg. Mr. Ingram, Alnwick, was second, and had the Canon Hall and Tottenham Park [*Muscat of Alexandria*] very fine.

The only exhibitor of a pot Vine in fruit (white) was Mr. McLeod, Newbattle, Dalkeith, who had a very creditable plant bearing twelve bunches. The black Grapes in pots were below the average, fruit much rubbed and unsightly. Mr. Adamson, Balcarras, Fifeshire, was first, Mr. Ingram second, and Mr. McLeod third.

Mr. Fowler's Grapes, as a whole, were undoubtedly the finest in the Hall, bearing marks of good finish and careful packing, in the latter respect contrasting very favourably with numerous others which had been rendered unsightly by the loss of their bloom.

Melons were shown in quantity. Mr. Hetherington was first in the Green-fleshed class with Colston Basset; Mr. Johnston in the Scarlet-fleshed class with Gilbert's Victory of Bath.

Pines were fewer than we are accustomed to see at a September show. Two fine Smooth Cayennes from Mr. Wilson, Castle Hill, Devon, were first in their class; and Mr. Ingram Alnwick, was first in the class for any variety, with two fruit of Prince Alfred.

Peaches were very good. Mr. Brown was first for the twelve, and Mr. Johnston second. For twelve Nectarines, Mr. Johnston was first, Mr. Brown second, and Mr. Ingram third. Mr. Cummings was first for Apricots, and Mr. Henderson, Halfeld, Ledbury, Herefordshire, was first with very fine Brown Turkey Figs. Plums were shown well by Mr. Bruton and Mr. Wilson.

In the collection of dessert Apples, R. Webb, Esq., Calcot, Reading, was first with a fine assortment; Mr. Culton and Mr. Robertson, Hartrigg, Jedburgh, showed well in this class. Mr. Webb was also first in the collection of kitchen Apples.

Pears were well represented by those from Mr. Carmichael, gardener to H.R.H. the Prince of Wales, Sandringham, and Mr. Miles, gardener to Lord Carington, Wycombe Abbey, Bucks.

Great quantities of other small fruits were shown of more or less value or merit. Mr. Methven, gardener to Col. Campbell, Blythswood, was first for the specimen dessert decoration of fruit and flowers; his table was simple and elegant in the extreme. Flowers and Adiantum fronds were principally used, with a Melon at the one end, and a very handsome Queen Pine Apple, the finest in the room, beautifully swelled, with a very small crown, at the other. Grapes were also very good; Mr. Lewis, gardener to Colonel Buchanan, of Drumpeller, was second with a very nicely arranged table.

Plants occupied the principal part of the Hall. Mr. Bullen, of the Botanic Gardens, had a large circle in the centre filled with a choice collection of stove and greenhouse plants, succulents, &c. Tables ran along both sides; conspicuous amongst the collection on these was that of Mr. B. S. Williams, of Holloway, containing some very choice and valuable specimens. Of *Lapageria rosea* he had a magnificent plant trained in a globular form, very large and beautifully bloomed; *Odontoglossum Bluntii* had one very fine spike, which was much admired; *Epidendrum prismatocarpum* was finely bloomed; *Curcuma*, with its singular centre; *Nepenthes Rafflesiana*, a grand example, with very large pitchers; *Crotons* were numerous, varied, and of the choicest description; *Agaves* were nicely mingled throughout. *Saccolabiums*, *Trichomanes*, *Dionæas*, *Bouvardias*, *Ericas*, *Davallias*, *Adiantums*, &c., were in every respect highly praiseworthy. Messrs. J. & R. Thyne, nurserymen, Glasgow, were awarded the first prize for the table of plants arranged for effect. This occupied the west end of the Hall, with large Palms, tree Ferns, *Pandanuses*, and *Crotons* along the back, and smaller plants beautifully arranged along the front. *Alocasia macrorrhiza variegata* was a very fine indeed; *Todeas* were in fine condition, the *Crotons* beautifully grown and coloured, *Gleichenias* remarkably fine, and *Cycas revoluta*, the finest specimen we ever recollect seeing. The mass of foliage was enlivened with some excellently-flowered *Odontoglossums*, *Ixoras*, *Valotas*, &c. Mr. Solly, gardener to Provost Russell, Mayfield, Falkirk, was second; his plants were much larger than those in the first-prize group. Palms and tree Ferns formed the larger section, whilst of *Adiantum farleyense* and many *Orchids* there were magnificent specimens. Mr. P. McKenzie, nurseryman, Gordon Street, Glasgow, was third.

Messrs. Veitch & Sons, Chelsea, were first for new plants not in commerce, and also for the collection of new and rare plants. In their collection we noted as being wonderfully fine, *Bertolonia margaritacea superba*, *Saccolabium Blumei*, *Cattleya superba*, *Aralia Veitchii*, very graceful; *Lapageria alba*, very fine; *Selaginella japonica*, *Phormium Colensoi*, *Cypripedium Dominionum*, very curious and one of the finest; *Cynoches*, and *Caladium Princess of Teck*, a dwarf very pretty variety; while *Bertolonia guttata* and *Eriocnema marmorata* were beautifully marked. Messrs. Veitch had also some choice dwarf Palms; and from a small arch along the centre of the table were suspended fine little plants of *Nepenthes hybrida*, *Hookeri*, *Sedeni*, *Rafflesiana*, *phyllamphora*, and *maculata*. The position of these showed them to the best advantage. With other tables of plants Messrs. Smith & Simon; Dickson & Co., Edinburgh; Paul, Crossflat Nurseries, Paisley; and Mr. Thomson, gardener to T. Coats, Esq., Fergusliee, deserve the highest praise.

In the gardeners' classes, *Orchids* were few. For six fine-foliaged plants, stove or greenhouse in flower, Mr. Buchanan was first with *Rondeletia speciosa*, *Erica Marnockiana*, *Vinca alba*, *Statice profusa*, covered with its delicate blue flowers; *Allamanda Hendersoni*, and a finely-flowered plant of *Ixora coccinea superba*. For three stove or greenhouse plants Mr. Hetherington was first; and for one fine-foliaged plant exclusive, Mr. Ollerhead, Killermont, was first. Mr. James was first for the finest tree Fern; and in Mr. Fleming's collection of six Ferns was a remarkable handsome plant of *Adiantum farleyense* upwards of 3 feet in diameter. *Davallia tenuifolia picta* and *Gymnogramma Martensi* were both fine specimens.

Zonal *Pelargoniums* and those in flower were very deficient.

The best twelve came from Mr. Campbell, Holmwood, Cathcart. *Liliums* were few, and *Fuchsias* quite miserable.

Cut flowers were exhibited in a small tent in the grounds out from the principal building and formed a moderate display in some classes. The weather has been very unfavourable to outdoor flowers, and many of these bear sad marks of its effects. *Hollyhocks* were quite unnoticeable, and *Roses* were few, small, and poor. We failed to find one well-developed bloom in the collections. *Dahlias* were very good. Many of the varieties were unnamed. Mr. May, Hope Nurseries, Bedale, Yorkshire, was first in the nurserymen's class for thirty-six blooms; Baron Taunton, Octoroon, Self, Flag of Truce, and Lord and Lady Derby were the finest. Second came Mr. Edward, Castle Gate, York; third, Mr. White, Paisley. Mr. May was also first for twelve Fancies; Mr. Edward second; and Messrs. Little & Ballantyne, Carlisle, third.

Mr. James Service, nurseryman, Dumfries, was first for thirty-six spikes of *Gladioli*, with a magnificent collection; Madame Desportes, Argus, La France, and Calypso were especially fine. Second came Messrs. Stewart & Sons, Dundee; Sir William Hooker, Vesta, Reine Victoria, Dr. Livingstone, and Humboldt were extra good. Third came Messrs. Robertson & Galloway, Ingram Street, Glasgow. Messrs. Kelway & Sons exhibited the finest stand of thirty-six *Gladioli* in the tent, all seedlings. Mr. Charles Turner, Royal Nurseries, Slough, exhibited some very fine seedling *Dahlias*, and was awarded first-class certificates for Prince Arthur, gorgeous yellow; Herbert Turner, elegant pure white; and Laura Haslam.

In the gardeners' class for twenty-four *Dahlia* blooms, Mr. Neil, Glass, was first; in the twelve, Mr. Fyfe, Kilmarnock; and for twenty-four spikes of *Gladioli*, Mr. Hetherington was first. *Annals*, *Asters*, *Verbenas*, *Phloxes*, *Pentstemons*, *Mari-golds*, &c., possessed little merit. Bouquets were well shown and tastefully made-up, though rather too many flowers were used in some cases, but they were very much admired. Floral designs in the models of flower gardens were very tastefully arranged. In the amateurs' class *Dahlias* were shown in fine condition by Mr. Whiteford, Kilbirnie; Mr. McIntosh, Ardock, Perth; Mr. Foster, Polmont; and Mr. Logan, Coldstream; *Gladioli* by Mr. Findlay, Mauchlin; Mr. Ross, Laurencekirk; and Mr. Cumming.

Vegetables were shown in great quantity and of first-rate quality. Although the Potato disease has been so prevalent this season, the display of Potatoes was the finest we ever recollect seeing. For twelve, Mr. Wm. Noble, Ladeside, Newmilns, was first; second, Mr. Smeall; third, Mr. Gigg. Peas were very poor on an average and rusty. Cauliflowers, Dwarf Kidney Beans, Beet, Leeks, Onions, Carrots, Celery, Parsnips, &c., were well represented. Cucumbers were also very good; Marquis of Lorne was exhibited, and very large in size, and it would in all likelihood have gained the first prize, but it was much older and yellower in colour than the first-prize fruit, which was of an unnamed variety.

The hardy coniferous plants were shown out of doors. Messrs. Barron & Sons, Elvaston Nurseries, Borrowash, were easily first with a very choice selection, conspicuous in which were *Retinospora plumosa aurea*, *Picea Parsonii*, *Thujaopsis dolabrata*, *Biota orientalis*, *Arthrotaxus selaginoides*, and the curious and rare loose-jointed *Arthrotaxus laxifolia*. Messrs. Austin McAslan were second with *Thuja gigantea*, *Cupressus Lawsoniana*, *Retinospora pisifera*; and Messrs. Dickson & Turnbull, Perth, were placed third, with a lot in which seemed to us more deserving than the second. In it were some fine *Wellingtonia gigantea aureo-variegata*, *Abies Douglasii elegans*, *Pinus sylvestris argentea*, *Picea grandis*, &c.

A first-class certificate was awarded to Mr. Thomson, Tweed Vineyard, Clovenfords, by Galashiels, for his famous new Grape, the Duke of Buccleuch, handsome in the form of its compact bunch, with berries of enormous size and excellent flavour, while the Vine has a robust and fertile constitution. The berries on this occasion were scarcely so large as those certificated by the Fruit Committee, and at Belfast, Bishop Auckland, &c. The colour which was then rather green has now become of a beautiful transparent golden yellow. It has proved itself to be equal to any other early Grape in its keeping qualities, as a splendid basket of it which was quite ripe in the first week of July, was shown by Mr. Thomson in the finest possible condition. For this it was awarded a special commendation. To Mr. Lees, gardener to the Earl of Haddington, a first-class certificate was awarded for *Verbena Lady Haddington*, an improvement on *Crimson King*, larger in the flower, and brighter in colour, with a beautiful bright eye. Similar awards were made to Messrs. Kelway & Sons, Langport, Somerset, for seedling *Gladioli*; to Mr. Maurice Young, Milford Nurseries, Godalming, Surrey, for *Juniperus chinensis aurea*, a very beautiful yellow-tinted variety, neat in habit, and very ornamental; to Mr. Webb, Calcot, Reading, for twenty-two sorts of *Filberts*, some of them very large, and a stand of *Maréchal Neil* *Roses*, which were the finest exhibited in any class.

The Royal Caledonian Horticultural Society had in aid to the

success of this Exhibition, generously postponed their annual autumn show, which was formerly held in September, until December.

The Judges for Fruit were—Messrs. Carmichael, Sandringham; Barron, Chiswick; Dunn, Dalkeith; Rust, Eridge Castle; Allan, Broomlow, Lurgan; McLellan, Invergarry; and Speed, Chatsworth. For Plants—Messrs. Moore, Chelsea; Bruce Findlay, Manchester; Fraser, Lea Bridge Road, London. For Cut Flowers—D. T. Fish, Hardwicke; B. S. Williams, Victoria and Paradise Nurseries, London; Mitchell, the Nurseries, Dean Park, Edinburgh. For Florists' Flowers—Messrs. Turner, Slough; Downie, Forest Hill, London; Paul, Crossflat Nurseries, Paisley. For Vegetables—Turnbull, Bothwell Castle; Henderson, Castle Wemyss; Campbell, Buchanan Castle.

BRIGHTON AUTUMN SHOW.

THE various aspects under which a horticultural exhibition may be regarded offer much that is interesting, instructive, and amusing. Such an institution is not always devoid of certain trifling blemishes perhaps, yet on the whole it is calculated to foster and improve all branches of horticulture; but it takes even a higher grade of usefulness in its humanising tendency, promoting, as it does, much kindly feeling and genial intercourse. Certainly there is at times a slight *per contra* in the shape of an irate non-successful exhibitor or two, with whom one would always feel disposed to deal tenderly, remembering how bitter is the first feeling of disappointment that failure brings, though generally followed by a healthy resolve at least to endeavour to gain some instruction from failure, and to try again with more earnest effort and better skill.

The extensive and very excellent autumn Exhibition of the Brighton Horticultural Society was held at the Pavilion on Wednesday and Thursday, the 11th and 12th inst. It embraced ornamental-foliaged plants, stove and greenhouse plants, Fuchsias, Pelargoniums, a class for single specimens, &c.; then there were table decorations, and cut flowers in a variety of classes and degrees, with fruit, vegetables, and various miscellaneous subjects. All the classes were well represented excepting vegetables, of which there was a miserably paucity.

A ten-guinea cup offered for ten variegated and ornamental plants by the London and Brighton Railway Company brought together four collections, forming a noble group of plants, occupying the whole of the banqueting room. The cup was won by Mr. J. Hudson, gardener to J. Imthurn, Esq., with noble tree Ferns, a huge *Chamserops humilis*, *Alocasia macrorrhiza* variegata, *A. metallica*, *Croton pictum*, *C. angustifolium*, *Yucca quadricolor*, and a magnificent *Stevensonia grandifolia*.

Of stove and greenhouse plants there was a really splendid display, not unworthy of South Kensington. The first prize for eight was won by Mr. S. Hudson, gardener to F. Barchard, Esq., with *Allamanda cathartica*, *A. nobilis*, an even well-shaped plant of *Erica retorta vittata*, a splendid specimen of *Vinca oculata*; a fine plant, somewhat over-tall and thin, of *Ixora javanica floribunda*, the charming *Echites splendens*, with its lovely flowers of a delicate peach shade, *Ixora amboynensis*, and a magnificent *Rondeletia speciosa* major, which was quite the gem of the collection. Mr. Parsons, who took the second honours, had a capital *Stephanotis*, a fine example of skilful training and culture, and the beautiful *Dipladenia amabilis*. The third and fourth prizes were also taken with good plants, among which was a fine *Clerodendron Balfourianum*, with a profusion of its creamy white and crimson flowers. In the class for fours were fine examples of *Vinca rosea* and *Bougainvillea glabra*. *Ericas* were represented, but the plants were of no great merit. *Liliums*, too, were of indifferent quality. I note this with regret, for they are a most desirable class of plants, useful for a variety of decorative purposes, and of very easy culture. The class for single specimens contained a few good plants; the first prize was given to a healthy but very ragged plant of *Ixora amboynensis*, the second going to a splendid specimen of *Statice imbricata*, which, although of a large size, presented a singularly graceful and elegant appearance.

Of Fuchsias there was a considerable number of large plants, which, although well and even profusely flowered, were deficient in symmetry; one plant only of Mrs. Marshall—a white-flowered variety—was well-shaped, and even this was disfigured by having a portion of the rough stake that supported it protruding from the top of the plant.

Zonal Pelargoniums were numerous and fine, notably Mr. G. Parsons's *Hydrangea*, a desirable variety, having large trusses of fine pink dark flowers, and Mdlle. Nilsson, of a deeper shade of pink, and with immense but very compact trusses. Among the plants of other exhibitors the bright scarlet *Leonidas* was conspicuous, as was Mons. Thomas, a really splendid variety, with fine large compact trusses of a soft pleasing shade of scarlet; *Bride*, with pretty compact trusses of white flowers with pink centre, and Mrs. W. Paul, an old but useful delicate pink variety, were also good. *Achimenes* were all good and well-finished plants.

Among numerous other excellent plants were a noble *Sanchezia nobilis* variegata, a quantity of *Begonias* of the flowering section, and collections of Ferns, including fine examples of *Lomaria gibba*, *Adiantum farleyense*, *Davallia divaricata*, and *Gleichenia glauca*.

The table decorations were most excellent, and were a remarkable advance upon anything of the kind one is accustomed to meet with at provincial shows; the whole of them—and there were some two dozen stands—were characterised more or less by an air of lightness and elegance, obtained in almost every instance by the judicious use of spikes of Grass and Maidenhair Fern.

Cut flowers were in great force, and generally were very good. Mr. Mitchell, of Piltown, took the leading position with Roses, as did Mr. Keynes, of Salisbury, with Dahlias, of which there was a fine display. *Gladioli*, *Asters*, *Hollyhocks*, *Phlox*, and *Clematis* were all well represented. Of the latter Mr. Cripps, of Tunbridge Wells, had an interesting collection, both of well-known kinds and of seedlings of considerable merit.

The display of fruit was an excellent one. Mr. G. Ward, gardener to J. N. Miller, Esq., Bishop Stortford, took the premier prizes for three bunches each of black and white Grapes, with splendid bunches of Black Hamburg, and equally fine fruit of Muscat of Alexandria. The same exhibitor also stood first in the class for baskets of 12 lbs.; but the victory was by no means an easy one, for the basket of Black Hamburg from Mr. R. Norris, gardener to R. Bosanquet, Esq., which was placed second, contained some extraordinary fruit, immensely superior in size, and very little inferior in colour to Mr. Ward's. Pines though not numerous were good, notably a Queen Pine weighing 5½ lbs. by Mr. Rochford, Page Green, Tottenham. The first prize for Melons was taken by good examples of that fine old kind Egyptian Queen, both in the open class and in that restricted to local growers. Apples, Plums, and Cherries were all good. Pears, too, were in great abundance; Williams's Bon Chrétien predominating, but of no great merit in any instance. Here again first honours in both classes were taken by fruit of the same kind, which was Marie Louise.

I have thus sketched the most prominent features of this successful Exhibition, and will conclude my report by observing that while in its plants and table decorations a marked improvement was visible on former efforts, it was as a whole worthy of London-super-Mare, and in some points not unworthy of London itself.—EDWARD LUCKHURST.

ADARE MANOR.—No. 2.

COUNTY LIMERICK, IRELAND.

WE cannot but linger and take note of the surroundings of the grand old Franciscan Abbey,

"Where many a saint and many a hero trod."

The rich pasture is striking, but that part of the demesne opposite the Manor is poor in landscape beauty compared with the other sides of the park. However, the young plantations, to which we shall afterwards refer, on the south, or Mount William side of the park, will in a few years vastly improve the landscape of this part.

From the old Abbey we obtain a glimpse of the giant Elms and of the Manor. The broad swelling knoll, so finely wooded, behind the Manor, is a great central feature in the park, and on this rise we still see traces of the Elms for which Adare was so famous in the last century. The first great breach made in the majestic avenues of Elms was caused by a storm in 1814, when hundreds of the large trees were uprooted; again much havoc was caused by the storm of January, 1839; and that of January, 1842, left only a few fragments of the grand avenues of Adare. Arthur Young, on visiting Adare ninety-six years ago, spoke in raptures of the Elm trees, and of the Oaks in the large deer park, and "hoary Thorns of great size." The deer park is isolated from the demesne, and contains about 400 acres.

Close to the Abbey the approach to the Manor crosses the river by an old stone bridge. As giving access to a mansion of such a stately character, occupying a central position in a large park, this approach is the very worst in design that can be conceived. We hope the present noble owner of Adare will remedy this weak point; the late Earl had serious intentions of making a grand approach from the gate near Desmond Castle, and then sweeping it round the hill to the noble entrance of the Manor.

On crossing the bridge from the Abbey we follow a walk winding along the river's bank; from here there is a very beautiful evening view of the Manor seen past the row of towering Elms. Between the walk and the carriage drive on the right is a considerable strip of ground, on which we noted the following thriving trees—*Pinus pyrenaica*, *P. excelsa*,

P. insignis, *Picea Pinsapo*, and *Cupressus macrocarpa*. Farther to the right on the rising ground is a considerable plantation of *Deodars* thriving well.

We pass now to a nearer inspection of the giant Elms, of which there are fourteen in a straight line. The walk runs between the trees and the river, and their great limbs are supported on props, forming a very picturesque arcade—quite a sight to be remembered. The trees rise to about 130 feet in height, and at 4 feet from the ground the girth of five of them is respectively, 19, 17, 16, 14, and 13 feet; the smallest is 12 feet in circumference. These monarchs stand just where we enter the flower garden at the river side of the Manor. The strip of river garden is laid out in scroll beds well filled with bedding plants. On this, the east side of the house, the building is plain. The kitchen buildings stand at the north end of the mansion, and the walls are beautifully covered with climbers

supported on trellises. On the square block of the kitchen building a tablet shows that the structure was begun in 1832. On a large buttress on the river side of the mansion is a tablet to the memory of the master mason who conducted the building from its commencement until his death in 1852. He was a native of Adare, and on looking at this tablet we felt pleasure at this recognition of plain industry.

Leaving the river garden we ascend to the south front of the mansion by a massive stone stair in two flights. This front of the mansion is very rich in architectural beauties as well as broad rich landscape. The flower garden in front is of a pretty geometric design, and has on the river side a highly-dressed architectural wall, some 15 feet high where it touches the Manor, but falling at least half the height where it returns on the south side. As seen from the drive on Mount William, the wall is a very pretty picture; but looking at it



Adare Manor.

standing on the upper terrace it is far too contracted for such a breadth of ground, and for blending the grounds with the large mansion. The terrace on the south front is 4 feet above the flower garden, and is on a level with the walks on the entrance side of the Manor. A green ramp divides the flower garden from this upper terrace, but has a mean appearance in supporting a narrow terrace at the base of such a grand pile of buildings. It is worth noting, that of the steps leading down to the flower garden, two whole steps are each 18 feet in length by 14 inches wide; they are limestone, and show what a fine quarry there is near Adare.

The front of the mansion has a very striking effect, and we cannot leave it without giving a few particulars of the peculiar style of building. The stone used is a limestone, of which the blocks are of a light grey and a warm red, and the blending of these colours has been studiously carried out. The work is done in dressed ashlar, finished in the most perfect style, and the effect is the lightest and most elegant we have ever seen. The string courses are beautifully done, and the carving highly finished, the subjects carved being varied.

The colonnade in this front is a great feature, showing five Gothic arches, and being a copy of one belonging to the old Abbey in the ground; it illustrates that charming combination of comfort with open-air life which the learned men of Adare studied ages ago. The inner walls of this colonnade are of red limestone of dark and light hues; the roof is groined in the same stone with deep ogee ribs forming panels, and the

bosses in the centres where the ribs meet bear the different arms of the family on highly ornamented shields. This colonnade is partly divided by an arch, also Gothic. The second part is square, and a charming study, whence we see the distant hills, and where we hear the murmur of the river; while the flutter of waterfowl, and the sheep on the broad meadow, give animation to the scene, and complete a great picture. In this part of the colonnade the ribs of the roof are bolder, and spring from corbels with beautifully worked faces. In the centre where the ribs meet is a large raven with wings expanded; under each wing is a shield bearing the arms of the family; around the raven is the motto "*Quæ sursum volo videre*," in mediæval characters. On the front of the last finished part of the buildings is a panel with the following inscription:—

"This goodly house was erected by Windham Henry, Earl of Dunraven, and Caroline his Countess, without borrowing, selling, or leaving a debt. A.D. 1850."

The square tower seen in the illustration is 82 feet high to the battlements, and to the top 103 feet.

The north-west front, or main entrance side, shows a very distinct style of building. The gable of the last finished part of the Manor has a bay window of very peculiar construction, and highly ornamented. In recessed panels are ravens holding in one claw banners, while on scrolls around them is the family motto. This mode of ornamentation is followed up over all the bay windows of the new wing, but instead of the

raven being repeated, shields of different shapes bearing the family arms are used. This wing was completed under Hardwick of London. The rest of the building was chiefly designed by the late Mr. Pugin.

The hall door is a massive piece of work in a recessed porch, with groined roof, the ribs springing from shields showing the

alliances of the last four generations of the Quins and the Wyndhams. Over the hall door is the large bay window of the west end of the picture gallery. This window and the arch of the entrance door is between two octagon towers with battlements. The stone in these towers is prettily contrasted; the quoins are of grey, and the centres of black stones.

BROMELIACEOUS PLANTS.—No. 3.

ECHMEAS.

THIS genus contains some very beautiful stove ornaments, which deserve to be more grown than they are. One of the causes which have brought them into bad repute with many may be non-suitability for exhibition. Although no one can be fonder than myself of growing specimen plants, or of seeing grand plants staged at a public exhibition, I should consider it one of the greatest mistakes for anyone to grow nothing else but a few large plants for that purpose alone—it certainly is not the way to enjoy a garden, or the numberless beautiful forms to be found in the vegetable kingdom.

ECHMEA MARIE-REGINÆ.—The plant to which I now desire to call attention is one of the very finest, if not really the finest member of the order which has yet been introduced to Europe, and is a native of Costa Rica, whence it was brought by my esteemed friend Mr. H. Wendland. It has only flowered once in this country, and that was in the establishment of Mr. B. S. Williams, of the Victoria Nursery, Upper Holloway, to whose courtesy your readers are indebted for the illustration given, but which is necessarily much reduced in size. The plant is of robust habit, and when well grown is very ornamental, even when not in flower. The leaves are arranged in a vase-like manner, recurved towards the upper part, and measure from 12 to 18 inches in length; they are armed at the edges with sharp teeth-like spines; in colour they are dark green on the upper side, but somewhat paler below. The flower-spike rises erect from the centre of the vase-like plant, and is about the same length as the leaves, the lower portion being clothed with large, oblong, boat-shaped bracts, of a most pleasing rich magenta shaded with rose (a colour so charming and so rare amongst flowers and plants), and which retain their full beauty for fully two months. The upper portion of the scape, as the illustration shows, is densely clothed with flowers, which are, how-

ever, of only secondary importance, but which, nevertheless, afford a nice contrast to the bracts. They are tipped with blue in the young state, but change to pale rose with age.

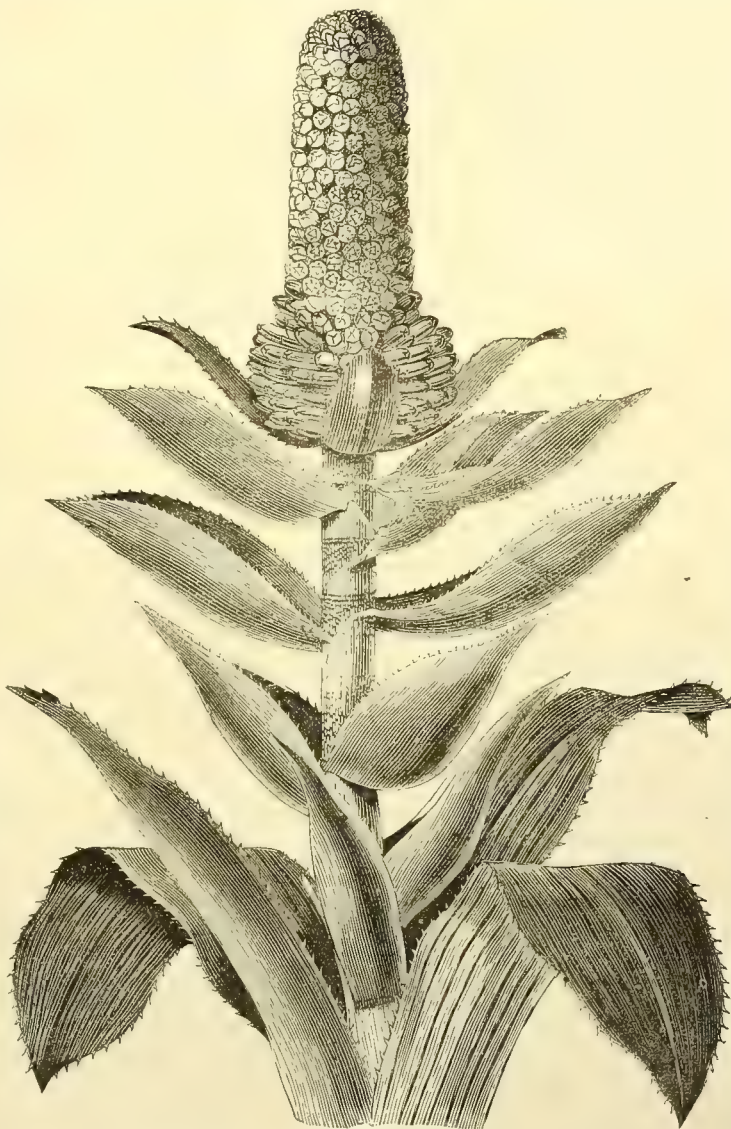
The cultivation of this plant, like that of the majority of its race, is extremely simple, the first and most essential point in its culture being the keeping of the crown well supplied with water, for in this lie the life and vigour of the plant. The pots should be well drained, for in a state of nature the plants are epiphytal, growing in the forks, and upon the branches of trees in the society of Orchids and similar plants. The soil should be a mixture of about two parts peat, one of leaf mould, and one of loam, with the addition of a little sand. In watering, I always pour the water into the crown of the plant, allowing it to trickle between the leaves into the pot, and it should be grown in a good stove heat.

ECHMEA DISCOLOR.—This is a fine old species, although not so robust or showy as that previously described; yet it is well deserving of general culture on account of its brilliant flowers, which are produced during July and August, and retain their full beauty for a considerable time. The leaves are broad, recurved towards the ends, destitute of spines at the edges, dark green on the upper side, and stained with red-

dish purple below. The panicle is branched, longer than the leaves, and coral red; the flowers, which are naked, are deep bright red tipped with blue, affording an elegant and pleasing contrast. It is a most desirable plant, and of the most easy culture to those having a stove.

ECHMEA WEILBACHII.—Leaves broad, strap-shaped, like the rest of the species sheathing at the base. The panicles are of about the same length as the leaves and branched, clothed with bright scarlet bracts, whilst the flowers are deep blue and pink. It is a very handsome plant, a native of Brazil.

ECHMEA DISTICHANTHA.—This is another superb plant from



Echmea Marie-Reginæ.

Brazil, where it is epiphytal upon trees, like the majority of the members of this genus. The leaves are long, linear-oblong, and acuminate, glaucous, and armed at the edges with reddish-brown spines. The scape is densely clothed with bright red bracts, whilst the petals are bright blue enclosed in rose-coloured sepals, the whole forming a rich and attractive display.

ECHEMA GLOMERATA.—This, again, is another species from Brazil well deserving the attention of all lovers of plants. The leaves are about 18 inches long, broad, obtuse at the apex, and armed at the edges with small, distant black spines. The scape is erect, stout, from 8 to 12 inches long, densely clothed with bright red bracts, whilst the flowers are deep blue.—*EXPERTO CREDE*.

SOME PREDATORY INSECTS OF OUR GARDENS.—No. 35.

THE caterpillar of the Leopard moth (*Zeuzera Esculi*) is certainly more common than formerly in many places; perhaps this may be due to the circumstance that rather a wholesale destruction of sparrows has been carried on in some districts, and these birds are known to be particularly fond of preying upon the moths when they emerge in June and July. This caterpillar is to be found in a much greater variety of trees than its relative, the Goat moth, which divides with the former the honours of tree-boring in our London suburbs; but the Goat moth seldom attacks trees in orchards, while the Leopard moth frequently works insidiously in the wood of Plum, Pear, and Apple, being very partial to the Pear, and preferring the main stem to the branches. It has been asserted by a distinguished entomologist that, in the first place, it rarely diminishes the fruit-bearing power of the tree, but even sometimes makes the tree yield more plentifully; and secondly, that it never kills a tree. I am not, however, convinced that these are logical conclusions. A tree mined by the Leopard caterpillar may appear to do well, and "put on a spurt," but this is, in all probability, followed by a reaction, and I have noticed trees thus infested which have almost ceased to bear. On the other question, though innocent of causing the death of the tree by the immediate effect of its jaws, the caterpillar prepares the way for other insect marauders, and also by the holes which it makes in the wood communicating with the outer air, it exposes the tree unfavourably to the influences of rains and frosts; for this caterpillar, unlike most other wood-feeding larvæ, occasionally quits its gallery, as I have lately observed, especially in the spring of the year, and it likes to have a handy track to the exterior, by means of which it will now and then eject "frass." There is now no doubt that the larval condition lasts two seasons, perhaps even more, though there is an annual emergence of the moths. The females remain very inactive upon the trunks of the trees for some time; the males are more on the alert, and fly briskly, but die off much sooner. A man, crossing one of our metropolitan parks, picked one of these Leopard moths off a tree as a great prodigy, and it was taken into a public-house and placed in the parlour for exhibition under a glass. It happened, however, to be a male specimen, and a series of frantic evolutions soon removed all the scales from the elegantly-spotted wings, very much to the surprise of the discoverer as he surveyed his rarity when it had settled down from exhaustion.

Common enough just at this season* of the year in the flower and kitchen garden, and even appearing occasionally in the conservatory, though entering that locality rather by accident than design, is the caterpillar of the White Ermine (*Arctia Mentastri*). The moth is often seen in June, sitting on walls and palings, or crawling on grass plats rather languidly in the daytime. This caterpillar is one of the general feeders, and when nearly full-grown consumes a good number of leaves in a short time. Probably its more natural food is a variety of low plants, it being frequently seen along the roadsides in the country feeding upon chickweed and plantain. Having found its way into our gardens, however, it thrives well enough there, and a list of the species on which it has been caught regaling would be a long one. Its inclination to hide during the day often prevents the horticulturist from detecting it, and, moreover, upon a sudden alarm it rolls into a hairy ball in the manner of the, as abundant, Tiger caterpillar. The name "Woolly Bear" is loosely applied to this caterpillar in common with others. Though from its protective coating it escapes almost entirely from being made a prey by birds, an ichneumonideous parasite deposits its eggs on the hairs, and

the grubs produced burrow into the body of the caterpillar. Also individuals not unfrequently die at the time of change of skin. The hairs in this caterpillar are brown, almost approaching black; the body is also brown, with a pale stripe along the back, and less distinct stripes along the sides. Having matured, it spins a cocoon of hairs and silk intermingled, in which it remains through the winter. Many of these may be found by gardeners in the winter attached to boards, old flower-pots, dead leaves, and twigs, and, if not of an entomological turn, the finder will do wisely to destroy them, as each female moth deposits a considerable number of eggs, which are yellow, pearly, and laid in clusters of twenty or more. The moth receives its name of Ermine from the cream-coloured wings covered with black spots, varying in number and size; the body is marked conspicuously with three rows of these on a yellow ground. The Latin name was given because the insect was supposed to be partial to the species of *Mentha*, but though I have seen it on *M. viridis* in gardens, it was not more numerous on that plant than on others.

Near akin to the species just described is that called in our vernacular the Buff Ermine, and in science *Arctia lubricipeda*, and we may say of it, as of its predecessor, that it is one of those caterpillars which are a source of annoyance rather than of positive injury to the horticulturist. A certain number of



Arctia lubricipeda.

them appear each season, but, unless in very exceptional cases, they do not muster strongly enough to do much harm. *Arctia lubricipeda* really has a preference for weeds, such as the common docks, and hence it is often more prolific in waste places than in cultivated ground; but if a moth finds itself in a garden it deposits eggs there readily enough, and the young brood takes to any plants which are handy. Still, it would not be advisable to do as some one suggested—namely, to grow a select bed of weeds in a corner of one's garden, as a sort of refuge for the destitute, because caterpillars of an omnivorous habit are also very erratic in their disposition. I do not know that in this particular instance the caterpillar deserves to be called *lubricipeda*—i.e., slippery-footed, but it is certainly a remarkably rapid walker; and though under ordinary circumstances one of these creatures crawls along demurely enough when engaged upon a caterpillar's chief pursuit—filling its interior, yet if it be interrupted or alarmed it suddenly becomes excited, and moves along at a rate which is astonishing. Something, however, of a spasmodic character this must be, for it pulls up as suddenly after awhile and remains still. Perhaps it was through a habit of the moth's that the species received its name, for if it be touched it draws up its legs and feigns death, and *A. Mentastri* does the same thing—a natural protection against enemies, birds especially. The Buff Ermine has the colour its name describes, the wings being chequered with spots of a black hue, some of the smaller forming a line across the fore-wings, the hind-wings have only two or three. We at once distinguish this caterpillar from its hairy relative by its dirty-white, unpleasant-looking colour, the hairs being long and light brown; a broad stripe runs along each side. The cocoon is placed near or on the ground. This insect is said to be very scarce in the north.

The caterpillars of these Ermine moths cannot be snared to their destruction, nor are they appreciably affected by fumigants, though, when tolerably young, they may be killed by thoroughly wetting the leaves on which they have been noticed. If they have escaped in the beginning of the season, and so have attained a good size, they must be searched for in the evening, or early in the morning when they are mostly "on the move."

Reports vary somewhat, but it is generally asserted that this is a bad year for Pears, and personal observation on my part confirms this so far as the metropolitan district is concerned. As a friend remarked to me sorrowfully, the bad years seem to be more frequent than the good, and he was, I found, inclined to attribute this more to the influence of unfavourable springs than to the predatory insects, of which so many attack the Pear and its allies. But it is certain that the insect called the Red Bud caterpillar, *Spilonota ocellana*, does much injury, just at that time when the tree is in a critical condition in the matter of fruit-bearing. The moth which it produces might be deemed a pretty species were it not so harmful. The

wings are of a reddish grey, and across the fore-wings there extends a broadish band of white, chequered with grey spots. The markings in different specimens vary considerably. In size the species is small, the expansion of the wings being less than an inch; it is not frequently observed with the wings extended, but closes them compactly in the fashion of its brethren, and sits on the trunk or branches of the trees, not often flying in the day, being easily alarmed. Cold or wet weather, however, dislodges it. The eggs are laid during June either on the fruit or leaf-buds. Wherever they may be placed they are usually concealed from view, and they remain unhatched for the long period of eight or nine months. When the sap begins to stir in the tree, and the vernal season is calling it into activity, this tiresome little pest is prepared at once to begin an onslaught upon the buds while they are tender and sensitive. McIntosh observes that after one of these caterpillars has commenced to gnaw a bud, "a drop of honey (?) is not unfrequently seen on it, which, issuing from the wound, serves as a sign to tell us that the fate of the bud is decided. The bud is prevented from growing by this drop, the points of the calyx thus becoming so closely glued together that its unfolding is prevented." The caterpillar, however, does not become a life-long prisoner in the closed-up flower-bud; but when it has satiated its appetite on one it migrates to another, and so on, until it arrives at its mature size, being even then but small, though the worker of a good deal of mischief.

The larvæ are greenish or brownish in colour, the head being darker, and there are a few short hairs on the body. If alarmed they drop by a silken thread, by which they can wind themselves up again very dexterously. Much as I advocate nipping evils in the bud (or in the egg), I must confess that hunting the eggs of the species before us is tedious and rather hopeless work. Burning weeds and refuse under the trees in early spring has been found to be of service, and a great diminution of their numbers has been effected by dusting the branches and shoots of the Pear and Apple with powdered lime, which is almost, if not quite, innocuous to the tree, while it decidedly "settles" the juvenile caterpillars.—J. R. S. C.

GREEN ROSES.

As your correspondents seem interested on the subject of green Roses, I may mention that I obtained a small one from Baltimore, U.S.A., in 1854. It is now a large bush, perfectly hardy, and flowering profusely all through the summer and autumn. At this moment it must have thirty or forty blossoms and buds upon it. It is clearly a monstrosity, as the green flowers are not petals, but rather the expansion of the green centres sometimes seen in Roses. It has a very faint scent.—B., *Liverpool*.

NOTES AND GLEANINGS.

We may hope that we and the public have now heard the last of the unfortunate HOOKER and AYRTON DISPUTE. We learn that Mr. Ayrton has expressed himself satisfied with Dr. Hooker's explanation of the "offensive" matter in his letter to Mr. West, and here the matter will probably rest. It would be more satisfactory to know that all probability of similar unpleasantness for the future had been removed, and that the Government recognises the principle that a servant selected to control a great scientific establishment must necessarily be entrusted with all the details of its management. The rejection, by the Committee of Recommendations of the British Association, of the resolution of Section D respecting the treatment of Dr. Hooker as Director of Kew Gardens, resulted in the sending-up to a subsequent meeting of the Committee of a more strongly worded resolution to the same effect, which was then passed, not only by the Committee of Recommendations, but by the General Committee.—(Nature.)

— In the *Argeriture Republic* the culture of THE SUN-FLOWER is strongly recommended, because the flowers are believed to afford bees the best material for wax, and the best honey; the petals of the flowers to yield a valuable dye; the seeds to give fifty per cent. of oil excellent for cooking and illuminating purposes, while they are also a superior food for poultry and for cows, increasing the flow of milk; the bottom of the calyx may be used for food in the same way as the Artichoke, which it closely resembles; the wood will yield one per cent. of potash, while common hard wood only yields one-tenth as much; the leaves may be used as food for animals, or made

into a good smoking tobacco; while the bark, properly prepared, affords material for the manufacture of paper.

— A VERY good "FLORA OF LIVERPOOL" has been published by the Liverpool Naturalists' Field Club. The area included is within fifteen miles of Liverpool and two of Southport, and embraces some very interesting districts. The work has been performed by a Committee of the Society appointed for the purpose, with the assistance of amateurs and previously published records, which have all, when possible, been verified. It appears to have been carried out with great care, and some valuable notes are appended to the records of some of the species.—(Nature.)

— BRANDY FROM MOSSES AND LICHENS.—In Russia alcohol and brandy are now largely manufactured from Mosses; the quality is said to be exceedingly good, and many distilleries are making profits of 100 per cent. by this novel industry.—(Mechanics' Magazine.)

— THE trade in PHORMIUM TENAX, or New Zealand Flax, is again reviving, owing to the improved processes of preparation adopted by Dr. Hector, who discovered that by keeping the Flax constantly wet with the oil of the weka, or wood-hen, when being woven into rope, greater suppleness is obtained, and the rope does not rot from exposure to rain. Some trials have been recently made by him with Phormium, Manilla, and oiled Phormium, and the following results obtained: The ropes having weights attached to them were placed over a revolving shaft and wetted from time to time; it was found the common Phormium ran twenty-two days, the Manilla forty-five, and the oiled Phormium ninety-five. Further experiments are being made as to the best oil to be used and most effectual preparation of the fibre.—(Mechanics' Magazine.)

— AMONG the most recently-published foreign floras we may note Dr. J. A. Knapp's "Plants of Galicia and the Bukovina," just published by Braumüller, of Vienna, in one thick volume.—(Nature.)

VANESSA ANTIOPA.

MR. FRANK FOWLER, Ravensdale Park Gardens, Co. Louth, Ireland, writes—"We have seen this beautiful butterfly here on two occasions this season, though not able to capture it. I think, like Mr. W. Robins, it has a taste for fruit, having been seen near the Peach house."

It may interest some of your readers to know that I caught a fine specimen of the Vanessa Antiopa, or Camberwell Beauty, in this neighbourhood (Exeter). It was resting on a Willow at the time I captured it.—W. K. BATCHELOR.

THE Camberwell Beauty butterfly appears to be unusually numerous this season. A fine specimen was caught here (Buxted) a fortnight ago. Subsequently another rare butterfly, the Bath White (Pieris Daplidice), was caught while hovering over some Lavender flowers.—EDWARD LUCKHURST.

A GOOD specimen of the rare butterfly, Vanessa Antiopa, or Camberwell Beauty, was taken yesterday, September 15th, hovering around some bee hives at Bramtingham Thorpe, near Hull. Since 1845 few entomologists have seen or captured a specimen. In 1858 a specimen was seen on the wing in the same locality.—R. C. K.

A GOOD WHITE ROSE.

If your correspondents desire a most reliable and beautiful white Rose I can name one unsurpassed—Madame de Sombrénil. The foliage continues throughout the winter of a rich myrtle green. I pick off the first buds, or it would bloom in May. I do so because the weather at that season rarely admits of uninjured blooms, and from then till November it blooms incessantly, by careful cutting-back. On a piece between windows 2 feet by 10 feet I counted last night fifty-seven open blooms starred all over the tree, each one perfect, and beautiful exceedingly—seen as I see it, with clump of scarlet Gladiolus in the border in front, too beautiful for words.—HARRIETT ASTEN.

WORK FOR THE WEEK.

KITCHEN GARDEN.

SHOULD the fine weather continue, the opportunity may still be employed in advancing work which can be proceeded with

most advantageously where the soil is in fine working condition. Prick-out an adequate supply of young *Cabbage* plants. Attend to the earthing-up of *Celery* likely soon to be wanted for use, keeping it closely soiled so as to blanch it well. If *Globe Artichokes* are desired at an early period of the year some strong suckers should now be selected, potted, and protected by being placed in a cold pit throughout the winter; planted out early in the spring they will precede in bearing the old plants by at least a fortnight. It is advisable to adopt precautions at this moment to avert the effects of early frosts from the last crop of *Kidney Beans* and other tender vegetables. A good store of *Lettuces* should be planted in a position where they can be protected from heavy rains. The general crop of *Onions* will be fit for housing by this time. The quarter they have occupied should be dug on their removal. Cabbages would be a good successional crop. Lights from the Melon-pits sloped against the wall will protect the *Tomatoes* and hasten the progress of the fruit. There seems to be a general desire amongst Potato-growers to ascertain without further delay the state of their crops, and, apprehensive of the continued progress of the disease, to rid themselves of the surplus supply without loss of time. In regard to the propriety of this proceeding I may offer an opinion. By this time, I imagine, the Potato haulm is pretty generally decayed; connection, therefore, no longer exists between it and the tubers. I suppose that infection would be distributed while vitality existed in the stem, affecting the Potato in proportion to the power of the disease, and as sufficient time has elapsed for its action, we may conclude that its full force has been expended and a determinate portion destroyed. Assuming the correctness of this opinion, apprehensions in regard to a further loss of Potatoes at present ripe and sound are unfounded, and nothing will be gained by raising them from the ground, unless, indeed, the situation be particularly unfavourable from excessive humidity, or the number of the other enemies of the Potato, when, of course, the sooner they are taken up and housed the better.

FRUIT GARDEN.

Remove rubbish of all descriptions from fruit-tree borders. No obstacles should prevent the roots participating in the advantages of favourable weather. Gather carefully and progressively the various Pears and Apples as they arrive at their full growth.

FLOWER GARDEN.

As cold nights may now soon be expected, scarce plants which it may be desirable to secure before they are injured should be taken up and potted at once, or carefully covered when there is the least cause to expect injury. That cuttings taken from plants in the open ground are liable to damp in a moist warm place is well known, and the variegated *Geraniums* are, perhaps, more so than most others; but persons who can command a gentle bottom heat without keeping the atmosphere warm and moist, will experience no difficulty in striking them now. The old plants of these are, however, well worth wintering wherever room can be found for them, for these go much further at planting-out time and cover the beds sooner with foliage and flowers than either autumn or spring-rooted cuttings; hence they should be carefully guarded from frost until the beauty of the garden is destroyed, when they should be taken up, potted, and stored for the winter in a cool dry house. Continue to put in cuttings of *Hollyhocks*, as these can be obtained, until there is an ample stock of rooted plants, and do not allow those that were rooted early in the season to suffer from the want of pot room. Cut off the flower-stems of herbaceous plants as soon as they become shabby, and endeavour to prolong the beauty of *Phloxes*, &c., by keeping them well supplied with water at the roots. Keep the beds and everything about the flower garden and grounds trim and orderly. Should *Verbenas* and other mass flowers show signs of exhaustion, manure water will be found a useful stimulant. See that the faded blossoms and seeds are regularly removed from beds, other blossoms will be thus encouraged; much of the energy of a plant is expended in the perfection of its seeds. As soon as the beds can be spared they should be prepared for the reception of bulbs. When many cut flowers are required, it is a great advantage to possess a flower border that is near to any large building; the heat thrown off at night is sufficient to prevent injury from early frost, and a little covering at night insures their safety. In other cases certain beds should be selected and regularly matted at night. Use the present opportunity of effecting a complete clearance of weeds from walks and borders. Roll and mow grass, trim edgings,

and prepare evergreens for removal. Prick-out young plants of *Berberries*, *Rhododendrons*, &c., that they may become established before the winter. Year-old *Pinuses* and *Cedars* are better kept in small pots in a protected situation than planted out.

GREENHOUSE AND CONSERVATORY.

The most desirable object in the management of the majority of plants in these structures, and one which must be constantly kept in view, is that of procuring a robust and hardy growth, and of lessening their vital energy that they may gradually accommodate themselves to the changing circumstances of the season. The influence of the autumn weather should be permitted to exert in a degree its legitimate influence. Ventilation, judiciously managed, will assist to accomplish the result recommended. Water will be required in less quantities both to the roots and foliage. Keep New Holland plants which have been placed under glass cool and airy, and avoid crowding, especially in the case of subjects which are in a growing state; but everything must be allowed sufficient space, so that the foliage may be fairly exposed to light and air, and rather than be under the necessity of huddling specimens too thickly together, some of the least valuable should be thrown away. Look sharply after mildew upon *Heaths*, as this pest is sometimes very troublesome upon plants that have been growing very freely in a shady situation in the open air and are in rather a soft state when taken in-doors, and apply sulphur freely on the first appearance of the enemy. Also see that everything is clear of insects. Take advantage of leisure hours to get *Azaleas* which have made their season's growth nicely tied, and also anything else requiring training, and endeavour to keep everything trim and neat in order to compensate as far as possible for the paucity of flowers among hardwooded plants this season.

COLD PITTS.

Plants which have made their season's growth should be freely exposed to sun and air on every favourable opportunity in order that the wood may be well ripened, but those still in free growth should be encouraged by every possible means while fine weather continues, keeping them rather close, guarding them carefully from cold winds, and giving a liberal supply of water at the roots. If any plant requires more pot room, get such shifted as early as convenient, keeping the atmosphere rather close, and watering very cautiously for some time afterwards until the roots get hold of the fresh soil. Continue to pot-off cuttings from the first batch of bedding plants. It is important to get scarlet *Pelargoniums* established and hardened before winter. Pot *Neapolitan Violets*, and let them be plunged in a frame. Lily of the Valley for forcing should now be potted, and *Mignonette* placed on an exposed and warm shelf in the greenhouse.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Celery.—This, though not so strong as usual at the present season, has made wonderful progress after the nights became longer and cooler. It has also received a good watering of sewage just before the arrival of rain, which would clear off from the leaves all sewage that had rested thereon, and this, although beneficial to the roots, is rather too strong for the foliage. We allude to this watering because it was rather more than necessary. We were depending too much on the sharp and frequent showers, and were surprised to find the soil in our *Celery* beds so dry; so dry, indeed, that if not watered we should have expected some of the plants to throw up a seed-stem. In dry days we cleaned and tied-up loosely the most forward beds in succession. Just now we do not care to earth-up much more than a month before it is likely to be wanted. The plants will grow all the better with an inch of soil once or twice placed over the roots. In earthing-up we have no doubt the paper sockets, advertised at such a cheap rate, answer admirably. Not having tried them as yet, we would remind our readers that we have found semicircular tins, such as those made from old spouting, answer very well, placing the tins side by side so as to enclose the plant, filling round the plant with dry ashes, and placing well-broken earth between in the usual way. We press the earth up to the tins before drawing them up and using them for other plants. To give ease in moving, these semicircular pieces of tin should not be less than 15 to 18 inches in height, and the diameter of two when placed together should not be less than 4 inches.

Prepared ground, by lifting Onions, for the main Cabbage crops, planted out more Coleworts and Borecoles for successions, and gathered lots of Dwarf Kidney Beans and Scarlet Runners to keep up a plentiful succession of young produce. We ran the hoe through young crops of Onions, Spinach, &c., and tried by a similar mode to beat the weeds, which is no easy matter this dripping season. Pruned Cucumbers a little freely, and top-dressed them with rich compost, in order that the plants turned-out early in spring may give a yet plentiful produce. Potted young Cucumber plants, and gave them just a little bottom heat. The weather as yet has required little to help it in the way of artificial heating.

FRUIT GARDEN.

Gathered most of the early Pears, including Williams' Bon Chretien, which has been the most forward for some time. Gathering at different times and helping the earliest, is the only way to prolong the period of this fine Pear. With Apples we have done the same, with all the most forward at least, for as soon as they approached maturity, birds, rats, and wasps found them out and holed some of the best of them, which is all the more trying, as we have not our usual quantity this season. We went over some of the bush trees a second time, and but for other matters pressing would have paid them even more attention, as it is the summer and not the winter pruning and nipping that tells on the future fruitfulness.

Strawberries in pots required considerable attention, as though they dislike being flooded, and especially before the soil in the pots is like a cheesecake so hard and full of roots, they must never become dry. These sudden showers are often deceptive, damping the surface and yet leaving the bulk of the ball far too dry for healthy growth. We are later this season than usual, and, therefore, more care will be necessary. To perfect the later Peaches in the orchard-house we find, also, a frequent good watering is required.

Damping floors of fruit houses is still useful in hot sunny days, but is less required in dull days and shady afternoons, except when there is a considerable amount of artificial heat given. A little firing with ventilation is very useful for late Grapes, both for thoroughly ripening them and insuring their long keeping. Late Melons in houses should also have a little heat in cool nights, and those in frames should have a little lining. A cover over the glass will also be useful in cool nights, as the heat enclosed will soon be cooled by radiation from the glass. A very thin covering, even, laid on the glass will do much to arrest the radiation of the heat, and will be still more effectual if raised 2 inches or so above the glass. In that case, to render it most effectual, the glass should, as it were, be shut in, as a draught from front to back would soon do away with the advantages of a clear space between the glass and the protecting covering.

ORNAMENTAL DEPARTMENT.

Lawns and walks are what one likes to see, but the first have entailed a vast amount of labour this season, partly owing to the rains, and partly owing to our relaying a portion last season and using some soil richer than we liked for thorough levelling; but for the extra cutting, it has well paid for the labour.

Flower-beds and borders are still standing well with one exception, and that is the pearly *Cerastium tomentosum*, which, unlike all our experience hitherto, is becoming studded with dried buff patches in many places, which greatly mars its beauty. In a straight row this browning is confined to the outside next the grass margin. In one row, planted afresh in March, there is hardly a brown mark, and, perhaps, the older edgings are the worst; but to show that it is not all owing to the time the plants have been in the ground, we have one large artistic bed of leaf colours, and the outside is this *Cerastium* planted carefully this spring and looking beautifully, with a low purple behind, and now it, too, is becoming dotted with brown patches half as large as one's open hand. We think it may be partly owing to fungus and red spider, as of the latter we discover traces on close examination.

In one long line this patching is chiefly—almost entirely—confined to some 2 or 3 inches in width next the grass, whilst for 5 inches or so in width above that, next a scarlet row, it is pearly white and uniform throughout. In this prominent position, if we could obtain a load of small coal dust, we should not doubt what to do. We would place the line along, cut off this patchy part, wash the coal dust, and lay down a row of the bright, small, black, shining coal in front of the pearly white. Years ago we did this with good effect, but before the end of the season the *Cerastium* intruded too much on the

thin black line. Black ashes or coal dust will be a poor substitute for the little sparkling bits of coal from which the dust has been washed. Be this as it may, the fact of the *Cerastium* becoming patchy by losing its white colour, and looking as if next to dead, though most of the patches show a fresh growth, is worthy of attention, as thus we may obtain some hints as to cause and remedy. For a pearly-looking white-leaved plant that will stand any amount of cutting and training, we could hardly find anything to equal it.

Watering Beds of Flowers.—As a general rule this has not been required, but we found a few beds shaded a little by large trees that needed watering if we wished to preserve the free growth and free blooming for six weeks longer. No doubt the trees acted to a certain extent as umbrellas in preventing the rain falling equally on these beds; and again, though the beds are a long way from the trees, still we have no doubt that the roots of the trees did find their way to the good soil of the beds, and thus robbed that soil of its richness and its moisture. A good soaking with sewage made the plants hold up their heads as briskly as ever.

From the above cause, where a small flower garden is surrounded with free-rooting trees, it is next to impossible to secure alike fine trees and fine beds, unless either by an open invisible deep trench where that need not be seen, or a wall of brick and the best cement, the roots are prevented entering the beds. We once examined a circular bed some 12 feet in diameter, raised 15 inches above the ground level, and found the soil one dense mass of Ash roots. The very moderate-sized Ash tree was 80 feet from the bed, but the roots found their way to the fresh soil.

Propagating Calceolarias.—All the shrubby *Calceolarias* we generally propagate by cuttings, and spring and autumn are the best times for that. We put in most of ours at the end of October in a cool place merely kept from frost; they take some months, however, to strike. In the spring, with a little heat, they will strike in as many weeks. Unless well hardened off they do not succeed quite so well as those struck in the autumn without any artificial heat; in fact, the less artificial heat of any kind such plants have the better they will thrive.

Nerium Oleander.—It gladdens us to see the handwriting of an old friend on this subject. At one time we grew the pink and the white varieties largely. They suited our purpose then, and we may return to them once more. We have had them as small plants in 6-inch pots, and as high shrubs in tubs. Our friend says his blooms are poor and flimsy, not such as he used to see. We think that the best account of the *Oleander* ever given appeared in the pages of the *Journal* from Mr. Beaton, where he described it as growing on the banks of the Jordan, pretty well roasted at one period, and then made something like a marsh plant when the Jordan overflowed its banks. When we used to grow it well we adhered to these conditions, giving comparative dryness in winter and plenty of moisture in the growing season. There is just one other little secret for securing not small but huge umbels of bloom. When the flower-truss appears at the end of a shoot, three or four young shoots will appear at its base. Allow these to grow, and in many cases they will injure and sometimes spoil the flower-truss; pick these shoots out with the point of a knife, and the flower-truss will be improved.—E. F.

TRADE CATALOGUES RECEIVED.

Alfred Legerton, 5, Aldgate, London, E.—*Wholesale Catalogue of Dutch and other Flower Roots.*

B. R. Davis, Middle Street, Yeovil, Somerset.—*Flower Garden Pocket Companion—a Catalogue of Bulbs, &c.*

John Scott, Yeovil, and Merriott Nurseries, Crewkerne, Somerset.—*Catalogue of Flower Roots.*

H. Curtis & Co., Devon Rosery, Torquay.—*Descriptive Catalogue of Selected Roses, &c.*

Hooper & Co., Covent Garden Market, London, W.C.—*Gardening Guide and General Catalogue for 1872.*

Robertson & Galloway, 157, Ingram Street, Glasgow, and Helensburgh.—*Catalogue of Hyacinths, Tulips, &c.*

Butler, McCulloch, & Co., Covent Garden Market, London, W.C.—*Catalogue of Dutch and Cape Bulbs, &c.*

T. Bunyard & Sons, Maidstone.—*Select List of Dutch Flower Roots.*

W. Hooper, New Wandsworth, London, S.W.—*Catalogue of Dutch Bulbs and other Flower Roots.*

R. H. Vertegans, Chad Valley Nurseries, Edgbaston, Birmingham, and Promenade Gardens, Malvern.—*Catalogue of Conifere, Evergreens, and Deciduous Shrubs, Trees, &c.—Catalogue of Roses.—List of Dutch Bulbs.*

B. J. Edwards, 222, Strand, and 25, Bishopsgate St. Within, E.C.—*Catalogue of Hyacinths, Dutch and Cape Bulbs, &c.*
 Dick Radclyffe & Co., 129, High Holborn, London, W.C.—*List of Dried Natural Flowers, Horticultural Decorations, &c.*
 Drummond Brothers, 52, George St., Edinburgh.—*Select List of Hyacinths, Early Tulips, &c.*
 Sutton & Sons, Reading.—*Catalogue of Bulbous Flower Roots, Plants, Seeds, &c.*
 W. Bull, King's Road, Chelsea, London, S.W.—*Retail List of Bulbs and Tuberous-rooted Plants.*
 R. Dean, Ealing, London, W.—*Catalogue of Hyacinths, &c.*

TO CORRESPONDENTS.

* * We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

N.B.—Many questions must remain unanswered until next week.

BOOKS (*J. Sturges*).—Thomson on the "Pine Apple," published by Blackwood, will give you every information on the subject.

GEORGE'S CALORIGEN STOVE (*M. C.*).—We have had no experience of George's Calorigen stove, and consequently we cannot speak with any authority upon its merits or mode of working.

SELECT HYACINTHS (*O. P. Q.*).—The following are a dozen good non-expensive single kinds—viz., *Red*: Madame Hodgson, Robert Steiger, Solifaterre, Sultan's Favourite, Amy, L'Ami du Cœur. *White*: Grandeur à Merveille, Madame Van der Hoop, Queen of the Netherlands. *Blue*: Baron Von Tuyl, Charles Dickens, General Lauriston. Of double varieties you may have Duke of Wellington, La Tour d'Auvergne, Van Speyk, Regina Victoria, Prince of Waterloo, Groetvoort, and Laurens Koster. If you want early bloom, pot this month; if not, pot in October or November. Keep the pots in the dark about six weeks, but the time must be regulated by the growth, which you must not allow to become drawn up. You can hardly fail if you have good bulbs to begin with, an equable temperature, and gradually expose to light when the spikes begin to appear.

ACHILLEA MILLEFOLIUM.—A Constant Subscriber wishes to know if there is anything that will destroy common Yarrow. He says, "I have had children working on the lawn for weeks grubbing it up, and I think it has come worse than ever. For two years I have used Watson's lawn sand to destroy daisies and dandelions, and I fear it has greatly increased the growth of the Achillea."

PROTECTING CHRYSANTHEMUMS OUT OF DOORS (*Alfred*).—We cannot advise you further than to adopt the canvas covering you propose. Arrange it so as to throw off the wet. If you can keep them dry the flowers will endure a considerable amount of frost. We presume you will have sides to your covering. The covering should be ready in October, but only employ it in severe weather. In mild weather they cannot be too fully exposed. In very severe frosts you may put on mats or other material. We suppose, of course, that the plants are in a sheltered position.

SARRACENIA CULTURE (*L. M. E.*).—Drain the pots or pans well, and fill them with a compost of fibrous brown peat two-thirds, one-third chopped sphagnum, and a sixth part each of crocks broken small and silver sand. Do not pot hard, but let the material lie loosely, so that the water may pass away freely. Water well after potting, and then twice a week throughout the winter. From February to October, not inclusive, they will require water daily. Set the pots on rough shelves that will absorb the water passing from the pots; unpainted deal will do. The moist corner of a house, where no air is admitted in the immediate neighbourhood, is found the most suitable position. From October to February afford a temperature of 50° at night, with a rise of 5° or 10° by day, and at other times 60° by night, with 75° to 78° by day. Plenty of moisture in the atmosphere, with a very thin shade in sunny weather, are the other essentials to success. For further particulars of successful treatment see what Mr. Baines says in this Journal of May 9th, 1872, page 332. He is the most successful cultivator of these plants.

MANURE FOR POOR SANDY SOIL (*J. W. R.*).—Good farmyard manure is the best you can use; we should apply it in November before digging for the winter. Twenty tons per acre will be a good, but not too heavy, dressing. As the Broccoli will follow some other crop, the ground need not be manured for it, though under the circumstances a dressing of well-rotted manure dug in would be more beneficial than otherwise. Artificial manures are not nearly so good for your soil as farmyard manure, especially when it is mostly cow dung, which, from its lasting character, is best for a light soil. In spring we should give the Onion ground a further dressing of old manure, pointing it in with a fork lightly; and you may still further benefit the whole of the ground, as well as that intended for Onions, by dressing with lime and soot in equal parts, with half a part of salt, the whole well mixed and applied at the rate of one peck to 30 square yards. A mixture of guano and salt is an excellent manure for all kitchen-garden crops, and should be applied to them in moist weather.

CLUB ROOT IN CABBAGES (*S. W.*).—Clubbing is very frequent in old garden ground. Frequently change the positions of the crops; dig, trench, and expose the soil well to frost; lime it, or point in a dressing of soot. As regards the plants, transplant them frequently, rejecting all that exhibit protuberances on the roots. A little wood ashes or soot dropped into the holes at planting may also prove beneficial as a preventive; but when once a plant is fairly affected, the best thing to do is to burn it; even if the protuberance is removed the plant rarely comes to much.

SOWING APPLE AND PEAR PIPS (*P. W.*).—Apple pips should be sown moderately thickly in autumn in beds of good light soil, and covered with an inch of fine soil. They will come up in spring. The Pear pips should be sown in February after being washed from the pulp in autumn when the fruit is fully ripe, drying and preserving them in the same way as other seeds. The seedlings will come up in the year of sowing. The Dog Rose hips should be gathered in November, be kept in dry sand until Feb-

ruary, and the mass should then be broken to pieces with the fingers, and sown at the end of that month or early in March in good rich soil, covering with about half an inch deep of soil. Some of the plants will appear in May, but very often the seed does not germinate until the second spring. You will need to be on the look-out for mice. They are very fond of all the seeds.

TULIPS AND NARCISSUS FOR POT CULTURE (*J. F. K.*).—*Tulips*: Belle Alliance, Bride of Haarlem, Chrysolara, Keizer Kroon, Le Matelas, Proserpine, Vermilion Brilliant, White Pottelbakker, Rose Aplatie; these are single varieties. Double varieties are Imperator Rubrorum, Princess Alexandra, and Tournesol. *Narcissus*: Bathurst, Bazelman major, Queen of the Netherlands, Golden Era, General Wyndham, and Lord Canning.

BOILER (*Derry*).—A saddle-back boiler 18 to 20 inches in length would be ample for such a place, and about 50 feet of 3-inch piping. We prefer 3-inch pipes for a house of such small size, as they will soon heat, and only occasional fires will be wanted. We always consider hot water the most expensive means of heating such small places.

GREENHOUSE ARRANGEMENT (*A Novice*).—We have looked over your letter and sketch, and hardly see the particulars you want. Your flow-and-return pipe under the stage will keep out frost in a 12-feet-wide house, but it will scarcely do more in severe weather. To keep flowering plants in winter—not to be under 45°—would require an extra pipe, unless your two pipes were very hot. The earth you could lighten with well-sieved, dried, rotten dung, lime rubbish, and sandy loam. In the earth border we should plant Vines from 4 to 5 feet apart, chiefly Black Hamburgs. A shelf could cover the border for plants. Your most serviceable plants will be Camellias, Epacris, Cinerarias, and Chinese Primulas for winter and spring, with the addition of some Cytisuses and Sweet Daphnes. Pelargoniums of the scarlet section and Fuchsias would do well in summer, and tender annuals if the Vines did not shade them too much.

VINES IN GREENHOUSE (*A Constant Reader*).—You are acting quite right in applying a little fire heat during the day, letting the fire go out or keeping it very low at night, and giving air day and night. The fire heat is very necessary in such a dull, wet, and late summer as the present. The covering of the border with Melon-frame lights will, by throwing off the rain, assist in the ripening of the wood through the dryness checking growth; and the heating of the border by the flue will contribute to the same result. The border will be rendered drier by it, and that will tend to make the Vines rest.

THRIPS ON FUCHSIAS (*A. Z.*).—The leaves you sent us were devoured by thrips, of which the white is the young, the black the old state. No specimens reached us with any numbers on them. In addition to the thrips, there were on the leaves vast numbers of their eggs; and as these will become thrips, first white, then black, you will need to pursue a lengthened course of treatment for their destruction. The plants will be going out of flower, and will soon be at rest. We should at once lay them on their sides and syringe them with a solution of 2 ozs. of soft soap to a gallon of tobacco water. This may be made by pouring boiling water on the strongest shag tobacco, covering up until cool, and then straining. Two ounces of tobacco are sufficient for a gallon, along with two ounces of soft soap. Apply with a syringe, turning the plants round so as to thoroughly wet the under sides of the leaves—in fact every part of the plants. Repeating the application in about ten days will be sufficient for this season; and if the thrips reappear next year fill the house with tobacco smoke on the first appearance, and whenever one is seen repeat the fumigation. The house should be so filled with smoke that not a plant can be seen through the glass.

MESEMBRYANTHEMUM CORIDIFOLIUM VARIEGATUM, ALTERNANTHERA, AND ECHEVERIA SECUNDA GLAUCA PROPAGATION (*G. F. R.*).—You may raise the Mesembryanthemum and Alternantheras by cuttings, which should be put in now, the former in very sandy loamy soil, and those of the Alternantheras in a compost of two parts loam and one part each leaf soil, sandy peat, and silver sand. Place them in a mild sweet hotbed of 70° to 75°; shade them from bright sun, and keep them close, though air must be given if they are likely to damp off from an excess of moisture. When rooted remove them to a house with a temperature of 45° to 50°; giving only water enough to keep them fresh. In March they should be potted-off singly, and grown on in gentle heat. If there are cuttings they may be put in, and they will make nice plants by planting-out time. They should be well hardened-off before planting out. The plants should have richer soil when potted-off, increasing the proportion of leaf soil, or one part of well-decayed manure may be added. The Echeveria may be raised from seed, which should be sown early in March in pots well drained, and filled with a compost of equal parts light fibrous loam, leaf soil, and silver sand; press firmly, water, scatter the seed, and then sprinkle very lightly with silver sand. Place in a hotbed of 70° to 75°, just keeping moist. When the plants are up keep them near the glass, and admit air moderately. When large enough to handle pot them off singly in the smallest size of pot, using the same compost as for the seed. Return them to the hotbed, and keep them no more than sufficiently moist, but shaded from bright sun until established; then admit air freely, and remove them to a cold frame when they are growing. The plants will be small the first year—in fact they are hardly of a planting-out size until the second season.

HORTICULTURAL BUILDERS (*T. Bignell*).—We do not know of any horticultural builders in the immediate neighbourhood of Walton-on-Thames, but there are several at Chelsea, whose names you will find in our advertising columns, who will no doubt deliver any buildings you may commission of them, on terms nearly as advantageous as if they lived nearer Walton-on-Thames.

VARIOUS (*C. A. J.*).—Seedling Apples, to insure your having good fruit, should be grafted with scions of some known variety. You may winter Geraniums by covering them with hoops and a thick coating of litter or straw. We have not noticed Holkham Hall yet. We will attend to your other suggestion.

PLANTING FILBERTS (*A Regular Subscriber*).—We have not raised the Filbert from seed, but, like most fruits of an improved kind, seedlings will be liable to degenerate, though occasionally there will be amongst them one better. Generally the stock for planting is obtained either from suckers or cuttings. If you only want a small quantity you had better go to some respectable nurseryman, and he will supply you. With regard to your other inquiry, we expect an article on the subject.

FUMIGATOR (*Tobacco*).—We have never seen the fumigator you refer to, sold by Messrs. Barr & Sugden; but we have used Dreschler's, and found it effective.

TREATMENT OF YOUNG VINES (*M. P., Batham*).—Your Vines have done well. The buds towards the tops are generally the most prominent, but

those near the bottom of the rafters will produce good bunches. You may, as you propose, cut the rods back to 8 or 9 feet; they will each bear from two to four bunches without injuring the Vines. You must bend the cane down, so that the top may be brought to the base of the rafter; this will cause the buds to break regularly. Dust the affected leaves with flowers of sulphur; this is a sure remedy for mildew. Keeping the ventilators open would not bring it on. See that the Vines are not dry at the roots, and a little fire heat with ventilation would be beneficial in dull weather. Keep your Peachhouse rather warm until the wood is ripe, and preserve a moderately dry atmosphere. Leave the ventilators a little open at night.

YOUNG GARDENER IMPROVING (J. M. C.).—At your age, seventeen, you would remain at least until the following spring where you are, then decide, if possible, whether you will be a gentleman's gardener or in some way connected with the commercial department, as nurseryman or seedsman. In either case a year or two in one or more of the metropolitan nurseries would do you great good, even if you gave your services for little remuneration. Such diversified knowledge acquired by day, with close attention to study in the evenings, would give you a good basis, if you resolved on gardening, for getting in as journeyman or foreman into a gentleman's garden. If the nursery department is your object, you must move into different nurseries to see the different modes of doing the work, and learn to generalise for yourself, so as to suit your mode of working to your circumstances. The more knowledge you obtain the better, but bear in mind that mere knowledge will never compensate for a deficiency in courtesy, attention, and obliging manners.

LAWN SAND (J. R.).—You will see it advertised in our issue of the 5th inst.

WINTER TREATMENT OF TACSONIA. VAN-VOLKXEM AND MANDEVILLA SUAVEOLENS (J. R. N.).—Our plant of *Tacsonia* is now in full flower; in fact, it has not been without flower except for a few days for the past two years, and will continue flowering for a considerable time. It is planted out, and will have but little water during the winter. You do not say whether your plants are planted out or in pots. In either case they should have but little water from October to March; but how much, depends on the condition of the plants. Ours will not be watered as long as the shoots do not droop; once a fortnight will be sufficient to prevent that, but if they are in pots water may have to be given once a week. The same remarks apply to the *Mandevilla*. Keep dry, but do not allow the foliage to flag. Thin out the shoots in February, and encourage the plants with moisture.

PLUM LEAVES EATEN (Idem).—Probably the leaves are attacked by the larvæ of *Selandria atra*. The most effectual remedy is dusting the tree with quicklime, say twice at a short interval. Sprinkle the trees in the evening with lime water, made by adding one peck of lime to thirty gallons of water. Stir well up, let it stand forty-eight hours, then take off the clear liquid and add 2 ozs. of soft soap to every gallon of the lime water. When thoroughly dissolved apply it to the tree, wetting every part.

PEAR TREES UNFRUITFUL (S.).—You seem to have what is generally considered a good soil for Pear trees. Under the circumstances we cannot account for the trees not bearing. It may be, as the old gardener surmises, that the varieties are not suitable. You ought, however, to bear in mind that this has been an exceptionally bad season for out-door fruit. Many Pear trees in our own garden though smothered with blossoms have borne no fruit. We do not think the roots getting into the subsoil would be the cause, as the Pear likes a clay subsoil. If the ground is poor we would work some decayed manure into it with a fork, and wait until we saw the result of another season.

SELECT HYACINTHS (A. R.).—Hyacinths for pot culture. *Single Red.*—Amy, Duchess of Richmond, Gigantea, L'Ami du Cœur, Macaulay, Madame Hodgson, Mrs. Beecher Stowe, Reine des Jacinthes, Robert Steiger, and Sol-faterre. *Single White.*—Alba maxima, Alba superbissima, Baroness Van Tuyl, Grandeur à Merveille, Mont Blanc, and Oronides. *Single Blue.*—Argus, Baron Von Tuyl, Charles Dickens, Grand Lilas, Leonidas, Marie, and Mimosa. *Single Yellow.*—Anna Carolina. *Double Red.*—Lord Wellington, Noble par Mérite, and Regina Victoria. *Double White.*—La Tour d'Auvergne and Prince of Waterloo. *Double Blue.*—Blocksberg, Garrick, Laurens Koster, Louis Philippe, and Van Speyk. Single varieties are the most suitable for glasses.

SELECT EARLY TULIPS (Idem).—*Single.*—Coeur Cardinal, Bride of Haarlem, Fabiola, Keizerskroon, Pottebakker, white; Rose Aplatie, Vermillion Brillant, and Wouverman. *Double.*—Duc Van Thol and Tournesol.

VINERY ARRANGEMENT (E. P.).—We should not advise you to interfere with your present vinery, as you would not only need the partition but also a re-arrangement of the pipes, which would entail considerable expense. We do not see what is the good of the 4-inch hot-water pipe buried in the soil, except to heat it, and then it ought not to be in contact with it, but surrounded with rubble or in a chamber. If the pipe is intended for top heat expose it at once. To the conversion of the conservatory we cannot see an objection; it will answer admirably. You would need two more rows of 4-inch pipes, and with this amount of additional piping we think your boiler will be heating to its utmost capacity. It is well to attach under rather than over the full amount of piping to a boiler. In the case of too much piping the fire has to be kept up to a great heat with a heavy loss of fuel and considerable additional attendance, besides straining the boiler beyond its heating capacity.

EARWIGS EATING FERN FRONDS (F. W. K.).—The only remedy we know is to cut some broad beanstalks into lengths of 5 or 6 inches, and lay them about the Fern case. The earwigs will secrete themselves in the hollow of the beanstalk, and should be daily examined and blown out into boiling water.

CLIMBERS FOR CONSERVATORY (T. B.).—We should plant the back wall with Camellias in preference to Clematises, which are hardy. The roof we would cover with *Tacsonia Van-Volkxem*, *Passiflora*, *Bignonia Tweediana* and *Jasminoides*, and *Mandevilla suaveolens*; the pillars with *Cobaea scandens* variegata, *Kennedya*, *Lapageria rosea*, *Hoya carnosa*, *Luculia gratissima*, and *Rhynchospermum jasminoides*. The stage may be filled with such plants as *Pelargoniums*, *Calceolarias*, *Cinerarias*, *Primulas*, *Azaleas*, *Acacias*, *Vallota purpurea*, and a great variety of other subjects.

DESTROYING MEALY BUG (G. T. B.).—It spreads most rapidly in a dry atmosphere. There is no specific for it. Water is its great enemy. Freely syringing with soft water, and especially soot water made by pouring thirty gallons of water over a peck of soot, stirring well up, and straining before use, will help to keep it under; but as a dressing there is nothing equal to two tablespoonfuls of spirits of turpentine to a gallon of water at 140°, with the addition of 4 ozs. of soft soap. Lay the plant on its side over a tray or bath, and syringe it with the solution, turning it round, and thoroughly wetting every part. After half an hour syringe with water. Repeat as required. If the house generally is infested sprinkle the floor and other surfaces with guano,

having previously damped them with water. When the house is shut up the atmosphere will soon be laden with the ammonia evolved by the guano, and this ammoniacal vapour is fatal to the mealy bug and red spider. The sprinkling may be repeated at weekly intervals, and will tend to invigorate the plants rather than otherwise, and is attended with no bad consequences, only it must not be applied in too powerful doses, otherwise it will destroy the tender foliage of such plants as *Gloxinias*, *Acimenes*, *Gesneras*, and others with soft hairy leaves. All plants with smooth hard leaves it will not injure. It must be used with care, and it is better to employ too moderate doses than one powerful one that may do more harm than the insect.

MELONS CRACKING (Idem).—The cause is too little water during the swelling, and as a consequence the rind of the Melon becomes hard, and the fruit small. If a dull moist period set in about the time of ripening, or if the plants are in a free state of growth, sap is impelled into the ripening fruit, and the rind being incapable of growth or expansion, the fruit bursts—the matter inside literally breaks through the skin. The only remedy is to encourage free growth during the swelling period, and to lessen the supply as ripening goes on; indeed when Melons are ripening they can hardly be kept too dry, and the growth should be as small as possible.

ACRID TUBER (W. Nocks).—Raise a plant from one, and send it to us when in flower.

WASPS (W. J. T.).—If muslin or lace-net bags are used to enclose each bunch, or if lace-net is stretched over the opened space of ventilators and opened windows, the Grapes or other fruit ought to be safe. The bags you mention must be either imperfectly made or imperfectly fastened round the stalk of the fruit.

SEEDLING GERANIUM (An Amateur Gardener).—The dimensions of this year's seedling stated by you are very unusual.

STEEL TRAPS AND SPRING GUNS (Blenheim House).—To set them in any way, either with or without notice, is now illegal.

CELERY DISEASED (W. Adderly).—Dust the plants thoroughly with slacked quicklime, and earth all the rows up fully. The collars are only intended for excluding the earth whilst the earth is being applied.

APPLES AND CHERRIES FOR GALLOWAY (Mrs. C.).—Apples: for dessert Devonshire Quarrenden, Kerry Pippin, Gray Leadington, and Wyken Pippin. For kitchen purposes, Keswick Codlin, French Crab, and Yorkshire Greening. Cherries: Büttner's Yellow and Belle Agathe, neither of which are attacked by birds, will ripen with you unless at a great elevation.

INSECTS (C. M.).—The large looper caterpillar eating Pear leaves, and occasionally nibbling the fruit, is that of the moth *Biston betularius*; not rare, not a pest; it feeds on other trees; the moth is a handsome one.—I. O. W.

NAMES OF FRUITS (W. M.).—Coul Blush. (*Haresfoot*).—It is very like *Violette Grosse*. How deliciously your Figs are flavoured. (*G. C. C.*).—Your Pear will never be "ripe in July." It is *Comte de Lamy*, and will ripen about the middle or end of October. (*J. K. Y.*).—Your Apple is not the old Golden Pippin, but Franklin's Golden Pippin. (*R. E., Streattham*).—1, Louise Bonne of Jersey; 2, Eyewood; 3, Bergamotte Cadette; 4, Beurré Diel; 5, Red Doyenné; 6, Beurré Citron.

NAMES OF PLANTS (Albert).—(*Oenothera biennis*, the Evening Primrose. (*L. V. A.*).—*Melilotus officinalis*. (*H. B. M.*).—Apparently a form of *Pteris aquilina*, but specimen insufficient. (*Ravensdale*).—*Cornus sanguinea*.

POULTRY, BEE, AND PIGEON CHRONICLE.

FEATHER-EATING.

The discussion which took place on this subject last year will doubtless be remembered, though none of us were able to come to any very satisfactory conclusion. I do not like to be too sanguine, but I have some reason to think that since then I have met with a remedy which is either a specific, or, at least, more deserves that name than anything which has yet been given for this disgusting complaint.

In my own communication I pointed out the various things which in particular cases had been known to effect a cure; but in reflecting upon all that appeared, and all I could learn privately, I was struck with the fact that the free use of lettuce running to seed seemed to have had more beneficial effect than any other single remedy which had been tried. The chemical and medicinal properties of this plant led me to advise the trial of sedatives. Being very fortunately free from the plague referred to in my own yard, I have had the disadvantage of not being able personally to make experiments, and time has necessarily been consumed in receiving reports from others, but I think I may now say that acetate of morphia has, at least, a very marked effect upon the complaint.

In treating it in detail, the various causes should be remembered if it is to be treated with success. There is, first, the unnatural, morbid appetite, probably connected in some way with the conditions of the female system, though in a late case a lot of cockerels were as bad as the pullets. There are, besides, the immediate or exciting causes, which I have most fully proved, as I hinted before, are in nearly all cases either idleness or thirst; sometimes, also, the irritation of the skin from overcrowding and dirt and their consequences. Thirdly, in bad cases, there is the stimulus of the raw places with the confirmed habit or vice.

To meet this last, any very badly-pecked bird should be secluded till healed, all small stumps should be extracted, and the parts, unless actually raw, dressed with a very stiff lather (like shaving lather), made with carbolic acid soap, which will soon nauseate the palate of the birds. Any unusually wicked fowl should also be penned apart for a while if possible. Treatment will commence with aperient medicine, such as ten to

fifteen grains of jalap, or one to two grains of calomel twice a-week according to the size of the fowls, with one-eighth to one-fourth of a grain of acetate of morphia daily. It may be made into a pill in any simple form. Beside this, enough carbonate of potash should be put in all the water to give a slight alkaline taste. To meet the other causes, the fountain must be kept clean and cool, and always filled with the alkaline drink, and either some straw thrown down for the birds to scratch in, or a cabbage, or half swede, or mangold hung up by a long string to bob about as they peck at it. This will give much amusement and occupation, as well as green food, which must be regularly supplied.

In a case the other day, a whole lot of Brahma chickens took to the habit, cockerels (which were separate), as well as the rest. They were cured in a week by the medical treatment alone, but were on small grass runs. In most cases the other subsidiary measures would be needful as well. I shall be glad to hear further of the results of this treatment. My hopes are great of its being found generally successful.—L. WRIGHT.

LIVER DISEASE IN FOWLS.

IN reply to the letter of "I. K. L." last week, there can, I think, be little doubt that the disease of the liver she speaks of is of the regular strumous character. I say regular, because breeders of Asiatics have long been acquainted with it after unusually cold and wet seasons, such as last summer has certainly been. There must, of course, be some predisposition, and in this case the seeds of the complaint may have lingered on from last year, as the disease is usually of slow growth.

I had a note the other day from our old friend, "Y. B. A. Z." on this very subject, in which he states that the proper treatment would be alterative doses of mercury followed by tonics—say for a Brahma two grains of calomel, with single-grain pills afterwards twice a-week, followed by half a teaspoonful twice a-day of the preparation known to all druggists as "Parrish's Chemical Food." This is a syrup of phosphate of lime, potash, and iron, prepared in a soluble form from a formula by Mr. Edward Parrish, of Philadelphia. I have given the formula in the work "I. K. L." so kindly refers to, as I have not the slightest hesitation in saying that for high-bred stock it is the most valuable tonic ever discovered, being also daily more prized by medical men for more important cases. Its effect on weakly breeds or chickens is sometimes magical. I may mention that a friend to whom I had recommended it for his fowls on account of leg-weakness, was so pleased that he again recommended it to a friend who bred dogs, and the latter became quite as enthusiastic about its efficacy in his peculiar line.—L. WRIGHT.

RAMSEY POULTRY SHOW.

THIS was held on the 11th inst.; the following awards were made:—

DOBERINGS.—1, J. Longland, Grendon. 2, R. Wood, Clapton. *Chickens*.—1, J. Longland. 2, R. Wood. *Cock*.—1, J. Longland. *Hen*.—1, R. Wood. *Cockerel*.—1, J. Longland. *Pullet*.—1, J. Longland.

SPANISH.—1, H. Yardley, Birmingham. *Chickens*.—1, H. Yardley. 2, Mrs. Stephens, Abbots Ripton Hall. *Cock or Cockerel*.—1, H. Yardley. *Hen*.—1, H. Yardley.

GAME.—1, S. Deacon, Polbrook. 2, H. Yardley. *Cock or Cockerel*.—1, H. Yardley.

GAME BANTAMS.—*Black-breasted or other Reds*.—1, H. Yardley. 2, J. Goodliff, Hurlingham.

MIXED BREED.—1 and 2, J. Longland.

COCHIN-CHINA.—1 and 2, H. Yardley. *Chickens*.—1, H. Yardley.

HAMBURGERS.—*Any Variety*.—1, W. Cutlack, jun., Littleport. 2, H. Yardley.

POLISH.—1 and 2, Rev. W. Thornhill, Offord Darcy.

ANY OTHER VARIETY.—1, Miss Fryer, Moulton Paddocks, Newmarket.

DUCKS.—*Any Variety*.—1 and 2, Rev. W. Thornhill. *Ducklings*.—1, J. Goodliff.

2, Rev. W. Thornhill. *Rouen*.—1, J. Goodliff. 2, R. Wood. *Ducklings*.—1, J. Goodliff. 2, R. Wood. *Any other Variety*.—1, H. Yardley. 2, J. Goodliff. *Ducklings*.—1 and 2, J. Goodliff.

—GEESSE.—1, S. Deacon. 2, J. Goodliff. *Goslings*.—1, H. Wymann, Conington Lane. 2, J. Goodliff.

TURKEYS.—1, Mrs. Morton, Offord Darcy. 2, E. Arnold, Whittlesford. *Poult*.

—1, Mrs. Morton. 2, E. Arnold.

EXTRA PRIZE.—To the exhibitor gaining the greatest number of prizes in the foregoing classes.—H. Yardley.

SPECIAL PRIZES.—*For the Best Pen of Fowls*.—H. Yardley. *Ducks*.—J. Goodliff. *Geese*.—S. Deacon. *Turkeys*.—Mrs. Morton. *Pigeons*.—W. Minson. *Hens, Hants*.

COLLECTION OF PIGEONS, NOT LESS THAN THREE VARIETIES.—1 and 2, W. Minson.

JUDGE.—Mr. Tegetmeier, Finchley.

SEDGEFIELD PIGEON SHOW.

THE first annual Exhibition of this Society took place on the 10th inst. The entries, numbering 135 pens, greatly exceeded the most sanguine expectations of the Committee, so much so that they intend revising the schedule next year. The medal for the best bird in the Show was awarded to a Carrier belonging to Mr. Sadler, Boroughbridge, which was immediately claimed at £3 3s., and the medal for the second best was won by a Fantail belonging to Mr. J. Walker, Newark-on-Trent. The Variety class (24 pens) contained some exceedingly good birds, and

two extra prizes awarded. Foreign Owls were first and second, a Trumpeter third, a Blondinette fourth, and an Antwerp fifth.

CARRIERS.—Medal, G. Sadler, Boroughbridge. 2, A. Brown, Gillesgate, Durham. 3, E. Yardley, Birmingham. *hc*, A. Brown; G. Sadler. *c*, K. & T. Sanderson, Stanhope; J. Guthrie, Hexham; J. E. Pyman, West Hartlepool.

P. UTTERS.—1, R. & T. Sanderson. 2, J. Bell, jun., Newcastle. 3, G. Sadler. *hc*, A. Brown. *c*, R. J. Anderson, Newcastle; J. E. Pyman.

TUMBLERS.—1, J. E. Pyman. 2 and 3, W. R. & H. O. Blenkinsop, Newcastle.

FANTAILS.—Medal, J. Walker, Newark-on-Trent. 2, R. & T. Sanderson. 3, H. A. Ayrton, Saltburn-by-the-Sea. *c*, J. Walker.

TURBOTS.—1, A. Brown. 2, J. Young, Bishop Auckland. 3, H. Yardley. *hc*, A. Brown; J. Young; R. G. Anderson.

JACOUBINS.—1 and *hc*, W. R. & H. O. Blenkinsop. 2, H. Yardley. 3, J. Young.

DRAGONS.—1, H. Yardley. 2 and *hc*, J. G. Dunn, Newcastle-on-Tyne. 3, J. Guthrie.

MAGPIES.—1, R. Smith, Durham County Asylum. 2, M. Ord, Sedgfield. 3, A. N. Dodds, North Shields. *hc*, N. H. Scott; M. Ord.

BARBS.—1, H. Yardley. 2, W. R. & H. O. Blenkinsop. 3, R. Thompson.

ANY OTHER VARIETY.—1, W. R. & H. O. Blenkinsop. 2, C. Dennison, Halifax.

3, J. E. Pyman. 4, M. Ord. 5, R. Simpson. *hc*, M. Ord; R. Thompson; T. W. Kilkum, Bishop Auckland.

JUDGE.—Mr. T. Rule, Durham.

MALMESBURY SHOW.—No. 2.

ENTERING the grounds of Burton Hill, I find myself in one of the very prettiest and best-kept places which in my somewhat large experience it has ever been my lot to see. As far as I know this neighbourhood—and I have known it for eighteen years—Col. Miles's residence is quite unique; there is no other of the same kind. We have large and noble places, as Badminton, and Bowood, and Corsham Court; the residences also of many large squires. For the most part at squires' large and small, the gardens are only kept up just according to general requirements, and the gardener's taste not sufficiently encouraged. Then we have trim well-managed villa gardens, particularly one near Chippenham called "The Clift," in which the taste, and care, and industry of its owner have in twenty years produced a charming combination of variously-foliaged trees and many-tinted flowers. But Burton Hill is neither large mansion nor villa, but something between—a comfortable residence—a place big enough for space and small enough to be cosy in.

I have not the least idea who planned the gardens, or the gardener under whose care they are now, but to both there is much credit due. The grounds are not by any means large, but good taste in laying them out has made them in appearance very much larger. A long and narrow avenue, part firs, part, if I remember rightly, elms, shuts out the road winter and summer, and its narrowness gives an idea of length and consequent size to the grounds. Then, if the garden had been a natural slope merely, the eye would have seen all at once; but the surface being broken by grass terraces, with here a deep bowling-green-like lawn, in the centre of which was an artificial circle of water, with the stiffness of its margin broken by ferns, and around it a dazzling show of bedding plants in geometric beds; then there, a long line of small beds, with a geranium in the centre of each trained like a standard rose. Then I must not forget the shrubs, so many evergreen, so that Burton Hill must look cheerful in the very heart of dreary winter. This year, too, has been a fine one for lawns; not a blade of grass has been scorched, but the deep rains have kept all in richest greenness. Climbing a grass terrace, I peep into a conservatory forming a part of the house, and used for the nonce as a tea-room, many tea-tables standing between its columns covered with creepers. But what pleased my eyes, and specially my nose, was a sheet of heliotrope bloom covering the whole of one side of the conservatory. The delicate odour of this flower never struck me as so pleasing; and several square yards of bloom gratified the eye. In short, the gardens at Burton Hill and all the gardening arrangements reflect the highest credit to the gardener. It is so pleasant to see a place where the owners must delight in their garden and give scope for their gardeners' ability. I have noticed that when a lady and gentleman do not care for their garden their gardener is discouraged; while, on the contrary, when they love and especially understand flowers, he is encouraged and cheered in his work, and puts forth all his energies.

The flower and poultry Show was held in a field beyond the garden connected therewith by a temporary bridge. From this field one caught a pleasant glimpse of the venerable abbey. Here were tents and bands of music, and the usual attendants of a show. The flower show was interesting as a local gathering and exhibition, but only a fair one as to quality and quantity.

The poultry and Pigeon Show was also but small. The latter surely might have been much larger if the Committee had advertised their Show. It is not possible that, unadvertised, an out-of-the-way place, especially in the south of England, can have a good exhibition of poultry and Pigeons, because few keep them compared with the number in the north. I learned that there were fewer Pigeons this year than last, and poultry as well were diminished. The fowls were shown in the old-fashioned way—viz., three in a pen. This is a mistake; two may be fairly good, but the third spoils the look of all if not a match. There are two gentlemen who are poultrymen in and near Malmesbury—viz., Messrs. Hanks and Maggs, the former at Malmesbury, the latter at Tetbury, and they took, naturally enough, most of

the prizes. There were about fifty pens of poultry, and not more than half that number of Pigeons, and about the like of Rabbits, which latter seemed to please the boys especially. An extra prize was given for the best brace of chickens trussed for the spit, and for ducklings as well, but they only brought two entries each. Some good Black Hamburgs were shown, and a pair of good Runts.

My readers will readily understand that it was not so much the Show as the place and the people that were worth seeing—the quaint pretty garden, the grass terraces, the gay flowers, the dark evergreens, and the bright dresses of the ladies, certainly some of the prettiest slender maidens and stately-looking comely matrons that could be seen anywhere. The old borough of Malmesbury and its neighbourhood is certainly rich in beauty. The benefit of such shows as the one I have endeavoured to describe must be great. They are harmless; there is little drinking, much sociality of a good sort, and a refined taste is created or strengthened. One final remark: Babies and tobacco are out of place in a flower tent. My ears and nose were at Malmesbury offended by both. I wish at all such shows neither could be allowed admittance, or, if the pipe be produced, the offender be gently told to return it to his pocket. At Malmesbury, while I was revelling in the delicate scent of the Roses, a fellow thrust his tobacco stench under my nose. Smoking, like all selfish gratifications, should be enjoyed alone, or with those only who have a like taste. Railways now properly have their smoking carriages, so in travelling the annoyance has ceased, and it should not be tolerated in a flower tent. Babies are also best at home with their nurses or mothers.—WILTSHIRE RECTOR.

CANARY AILMENTS.—No. 1.

I WENT to see how it was getting on. I had known it from its birth, and had watched it during the various stages of its growth. Before its feathers were fully developed to the naked eye I had examined it with a powerful glass and pronounced it marked on each wing, each eye, and each side of the tail, and such it proved to be. When I last saw it alive it was a month old, fully feathered, strong, lusty, and giving promise of becoming a very high-class bird—not exactly a fitting successor to Black-eyed Susan, who departed this life about a month ago full of years, honours, and asthma, but a mule which would require some beating. True, I had heard of another celebrity, a Jonque, marked on each eye only, but my affections were placed on the subject of this memoir. Well, I went to see how it was getting on, for I had heard it was sick. When I entered the house there was a quiet and a gloom about the place which told me some calamity had happened, and I was simply motioned up-stairs in silence, in the direction of the bird-room, where I found him—I won't say who—him sitting in silent misery, seeking consolation in the society of a "churchwarden." I did not speak, for I knew his great heart was broken, but waited patiently till he told me in faltering accents that "it died last Thursday." "Died? The poor thing was murdered, that's what it was. Murdered I call it. I suppose you dosed it with castor oil? Somebody I know has a deal to answer for." And then I became aware there was a second visitor, and had also a pretty good idea who "somebody" was. For an hour I sat and listened to a lecture on homoeopathy; and though my allegiance to allopathy was not one whit shaken, yet what my friend advanced sounded so much like sense, that I asked him to give me a short course of lectures on homoeopathy as applied to the treatment of bird diseases, and the result is as under.—W. A. BLAKSTON.

It is quite needless for me to attempt here a dissertation on homoeopathy, for its great principles must be learned from abler sources than the present. For the "fancy," however, suffice it to say, that the medicines being given in minute doses are quite safe, and will only affect a bird when the remedy given is homoeopathic to the disease intended to be cured. It is, of course, advisable in all cases to put a diseased bird into "hospital," but from want of space I have frequently had to treat a bird whilst along with healthy ones, and always with benefit to the sufferer, and without any ill-effect to the others. Fanciers, therefore, have nothing to dread from giving a wrong remedy, which, indeed, is an error all beginners are liable to, for nothing but the closest attention will enable one to arrive at a correct diagnosis and cause of a disease; and one should never despair if a remedy does not work as miraculously as he would wish, for I can assure him from my own personal experience, that with perseverance and careful thought success under this treatment is certain.

Before going further I may as well say that you are perfectly at liberty to make any use you like of the contents of this communication, for I should only be too glad to be the humble means of alleviating in the slightest degree the sufferings to which our little feathered friends must be subjected as long as the lamentable ignorance and quackery of the old system,

which has hitherto been and is continually being, palmed upon fanciers are allowed to exist.

The remedies hereinafter mentioned are in tinctures of the third dilution, and may be obtained from any homoeopathic chemist in sixpenny phials. I shall take the diseases in the order in which they are most likely to occur from infancy upwards.

INDIGESTION.—This disease is commonly known as rupture or surfeit, and is, I believe, the cause of the great majority of the fatalities which so many breeders have experienced of late years. I have treated birds thus afflicted at the early age of fourteen to twenty-one days; but the period at which they are most liable to contract it is either shortly before or shortly after they can shell seed. When first attacked they look rather thick, dim about the eyes, and then, to use a fancy term, turn "soft," with their feathers all coarse and ruffled, and on blowing them up more or less inflammation and distension of the abdomen are observable. In the case of nestlings, the last two symptoms are not such safe guides, for they are generally a shade rosy and full. I therefore look principally to their droppings, which, when the birds are affected, gradually lose shape, and turn lighter and brighter in colour, in very inflammatory cases almost approaching the colour of egg-yolk, and are sometimes very watery, and more or less mixed with a chalky mucus or slime.

The causes of this disease are—too much green food, rape or hempseed, stale egg, impure water, and too much soft food. In the case of nestlings, they can only get too much soft food when fed occasionally by hand, so care should always be taken not to distend their crops overmuch.

The remedies are—aconite, pulsatilla, china, and arsenicum. The first is to allay inflammatory or febrile symptoms; the second is for defective digestion; the third for looseness of the bowels; and the fourth is required when the purging is more severe, and there is greater inflammation of the abdomen.

I also give a spare diet, and of the kind hereafter mentioned. My mode of administering the medicines is as follows:—

For nestlings, I take a teaspoonful of egg and bread or biscuit previously mixed, a teaspoonful of warm water, to which I add one drop of aconite and one drop of one of the other medicines according to the symptoms, then mix all together and give to the birds with a quill or match four or five times a-day, as in ordinary hand-feeding.

For birds which can feed themselves and are under six weeks old, I mix the remedies with their soft food in the same manner, and also put one or two drops into their water-fountains according to the size of the latter; after six weeks old, putting it in their water is sufficient. Whenever any beneficial effect is observable after administering the remedies, it is advisable in all cases to diminish the quantity, and continue to do so gradually until there is complete convalescence.

I have never had a single failure under this treatment, and I am quite certain that if attention is given to the first symptoms of this disease the two first-named remedies will nearly always effect a cure in an exceedingly short time.

If this disease is neglected the result will be a severe form of diarrhoea, or, perhaps, dysentery and death.

Diet.—The following is the diet I give my birds (during medicinal treatment, of course in small quantities), and if it were generally adopted by fanciers, and cleanliness always strictly observed, I think this disease would scarcely ever be contracted. For nestlings, give the parents only a small quantity of scalded rape seed with their Canary seed, green food in moderation, and egg and pounded biscuit, which latter should in all cases be quite fresh.

White bread a few days old is, I believe, often given with the egg, and is, perhaps, very good; but as there is always some danger of its fermenting in the stomachs of the birds, I prefer biscuits, and generally use milk or water ones, which I pound in a small mortar, and use in the proportion of two to one egg. I frequently add a small teaspoonful of oatmeal and sugar to make the whole more easy of digestion. Some fanciers use baked flour instead of either bread or biscuits, but I do not approve of it, as it makes the mixture rather too dry, and alone is indigestible. It may, perhaps, not be generally known to the fancy, that the finer the quality of flour the less value it is as an article of diet, it being almost entirely deprived of those nutritive salts which are necessary to render the starch, which it to a great extent consists of, available for nutrition. It is to make up for this deficiency that I add a little oatmeal to my egg and biscuit. I have fed nestlings on baked flour and egg, but always found that much of the flour came through them undigested, thus showing the want of the natural salts.

After the birds are out of the nest, and can feed themselves, they should have neither rape seed nor green food, and soft food only in moderate quantities, and more pounded biscuit should be gradually added to their egg as they get on to seed, so that the change from soft to hard food may not be too abrupt. After they can feed sufficiently on Canary seed, egg, which in quantity would cover a shilling per bird per day, is all they require. They should have fresh water every morning, as it is soon

turned putrid by the small particles of egg which fall off their beaks when drinking.

On the foregoing diet I find birds, old and young, will have better general health, and also retain the colour and quality of their plumage much later on in the season. For the moulting season I suppose I must allow breeders to follow their own peculiar whims and fancies. I will, therefore, only warn them that unless they abide by the same rules as before moulting they will have the same dangers to encounter, with this difference—more fatal results. They must bear in mind that too much soft food, food of an oily nature, or anything of an opening tendency, will soon disorganise the bowels of their favourites, then disease and death; verdict, as usual, "Moulting sickness." I have never lost but one bird during the moult, and that was, I believe, by an epileptic fit.

(To be continued.)

BAR HIVES.

WHILE thanking Mr. Symington for his favourable recognition in the Journal, September 5th, page 201, I trust you will permit me to explain that the inch which the shallowness of the frame permits at the bottom of the hive (too faithfully copied by Mr. Symington's workmen) is the space once occupied by the notched rack for steadying the bottoms of the frames—*à la* Woodbury, but which I do not now recommend. My idea of a comb frame is that it should have no bottom bar or rail at all until filled with comb to the lowest natural point, when the bottom of the comb might be squared off, and a piece of lath, which need not be more than a sixteenth of an inch thick, tacked on. By this means the combs would be worked down to their natural depth—*i.e.*, to nearly a quarter of an inch from the bottom board, and would be fixed solidly on to the bottom bars or rails of the frames, and there would then be no loss of space in the hive.

Mr. Symington is making his hives double-walled, and for summer such hives are admirable; but in winter the bees are as if they were "down a well," so little can they possibly be affected by any of the few sunny hours of winter. In my new hive, which is roughly described in a February number of *The English Mechanic*, I have adopted the double-wall system, but for winter have arranged for the front outer wall to be of glass, so that the whole front of the hive shall have the full benefit of all the winter sunshine. The super cover is pierced and glazed with the same object, so that the upper storey may be occasionally warmed and dried. In summertime the hive would be turned round, with double wooden walls to the front, there being two entrances to permit of that variation of aspect.

The crown board is in pieces for ventilating and to prevent warping, and is held in place by two ledges slightly hollowed underneath, so that one screw in the centre of each pinches the whole down tightly, and any part of the hive may be opened without disturbing the whole. The entrances are 9 inches wide by half an inch high, it being easier to contract an entrance than to increase it, especially in the busy time. The hive is 20½ inches wide, 17 inches long, and 11 inches deep inside, and has two division boards, and will contain twelve or thirteen frames.—C. N. ABBOTT.

BEEES, BEE HIVES, AND HONEY.

OWING to an advertisement appearing in your columns that there would be prizes offered for bees, bee hives, and honey, in connection with the Burton-on-Trent Floral and Horticultural Exhibition, August 21st—being myself a bee-keeper of many years' standing, and a constant reader of your Journal—I made a few remarks on that part of the Exhibition which most interested me. Having business at Burton about that time, I arranged it so that I might be present at the Show, and certainly it far surpassed my expectations. The exhibitors were not numerous, but the subjects excelled anything of the sort I ever saw before. First in hives came Mr. T. Young, Hornington, with a practical ten-bar frame hive; second, Mr. G. Cross, Uxbridge Street, also with a bar frame hive; third, Mr. T. Pegg, Dalton Street; fourth, Mr. Thomas Young, Hornington. An extra prize for a hive adapted to cottagers went to Mr. T. Young, Hornington. For a practical observatory hive, the first prize was taken by Mr. T. Young, Hornington. This hive was stocked with Italian bees, the finest I ever saw. I learned from the exhibitor that the bees were supplied to him by Mr. W. J. Pettitt, of Dover. Mr. Young also exhibited two sets of collateral hives, one stocked and one unstocked. The unstocked one in particular was fitted with every improvement, yet to my surprise they were not mentioned in the prize list. The prizes for super honey were as follows:—First, Mr. G. Cross, Uxbridge Street; second, Mr. T. Pegg, Dalton Street; third, Mr. H. Withnall, Rangemore. Extra prizes were awarded to Miss Baggaley, Whittington Hall, Lichfield; Mr. H. Withnall, Rangemore; and Mr. E. Statham, Doveridge.

If the same spirit were shown in other towns as there was at

Burton, I think a bee show would prove a great success at all floral exhibitions.—J. E. B.

TOMATO SWEETBREADS.—Cut up a quarter of a peck of fine ripe Tomatoes, set them over the fire, and let them stew in nothing but their own juice till they go to pieces; then strain them through a sieve. Have ready four or five sweetbreads that have been nicely trimmed and soaked in warm water. Put them into a stewpan with the Tomato juice, and a little salt and cayenne, add two or three table-spoonfuls of butter rolled in flour. Set the saucepan on the fire, and stew the sweetbreads till done. A few minutes before you take them up stir in two beaten yolks of eggs. Serve the sweetbreads in a deep dish with the Tomatoes poured over them.

OUR LETTER BOX.

BOOKS (A. N. C.).—Mr. Wright's book of poultry can be had of every bookseller. It is published by Messrs. Cassell in parts price 1s. monthly.

BOLTON, WELLINGTON, AND STAFFORD SHOWS (—).—They were not advertised, except in local papers.

METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	A.M.				IN THE DAY.						Rain.
1872.	Baromet- er at 39° and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Tem- perature.		Radiation Temperature		In.	
Sept.		Dry.	Wet.			Max.	Min.	In sun.	On grass		
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
We. 11	30.002	63.5	64.3	S.W.	60.4	76.0	59.6	111.2	56.1	—	
Th. 12	30.194	65.2	60.6	W.	61.3	75.2	60.4	122.6	58.2	—	
Fri. 13	30.322	65.4	61.8	W.	61.6	80.2	53.9	131.8	51.1	—	
Sat. 14	30.175	66.5	63.3	W.	62.2	72.7	57.5	101.3	55.6	—	
Sun. 15	30.104	65.2	62.8	W.	62.4	74.2	53.1	115.2	55.2	—	
Mo. 16	29.999	58.9	54.5	S.W.	61.2	68.2	48.6	117.2	45.8	—	
Tu. 17	29.887	62.7	59.2	S.	61.6	73.9	52.9	101.2	50.8	—	
Means	30.095	64.6	60.9		61.5	74.3	55.9	114.4	53.8	—	

REMARKS.

11th.—Fine day, and very oppressive, notwithstanding there was a strong wind all day.

12th.—Beautifully fine all day and night, though still rather windy.

13th.—Very fine day, but rather too warm for the time of year; somewhat cloudy for a short time about noon, then fine, and splendid sunset.

14th.—Fine, with cool breeze, alternate sunshine and cloud all day, and very close.

15th.—Fair, though hazy at 8 A.M., then fine, but occasionally cloudy during the day; very red sunset.

16th.—Morning rather dull, day fine, at times very bright, but much cooler.

17th.—A very enjoyable day, now and then cloudy, but very pleasant.

A week with frequent cloud, but no rain; a total absence of thunderstorms, although the weather was occasionally somewhat oppressive in spite of the wind, which was frequently rather high. Temperature above the average, especially on 13th.—G. J. SYMONS.

COVENT GARDEN MARKET.—SEPTEMBER 17.

THERE is no alteration worth quoting, and the markets generally are very dull.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	½	sieve	0	0	0	Mulberries.....	½	lb.	0 0 0
Apricots.....	doz.	0	0	0	0	Nectarines.....	doz.	3	0 0
Cherries.....	per lb.	0	0	0	0	Oranges.....	½	lb.	3 0 14 0
Chestnuts.....	bushel	0	0	0	0	Peaches.....	doz.	4	6 12 0
Currents.....	½	sieve	0	0	0	Pears, kitchen.....	doz.	1	0 3 0
Black.....	do.	0	0	0	0	dessert.....	doz.	2	0 4 0
Figs.....	doz.	1	6	3	0	Pine Apples.....	½	lb.	3 0 6 0
Filberts.....	lb.	1	0	0	0	Plums.....	½	sieve	5 0 0 0
Cobs.....	lb.	1	0	0	0	Quinces.....	doz.	1	0 2 0
Gooseberries.....	quart	0	0	0	0	Raspberries.....	½	lb.	0 0 0 0
Grapes, hothouse.....	lb.	2	0	5	0	Strawberries.....	½	lb.	0 0 0 0
Lemons.....	½	100	6	10	0	Walnuts.....	bushel	10	0 25 0
Melons.....	each	2	0	5	0	ditto.....	½	100	1 0 2 0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	doz.	2	0	0	0	Mushrooms.....	pottle	1	0 to 3 0
Asparagus.....	½	100	0	0	0	Mustard & Cress, punnet	0	2	0 0
Beans, Kidney.....	½	sieve	2	0	0	Onions.....	bunch	0	4 0 0
Broad.....	bushel	0	0	0	0	pickling.....	quart	0	6 0 0
Beet, Red.....	doz.	1	0	3	0	Parsley per doz. bunches	3	0	4 0
Broccoli.....	bundle	0	9	1	6	Parsnips.....	doz.	0	9 1 0
Cabbages.....	doz.	1	0	1	6	Peas.....	quart	1	0 0 0
Capecums.....	½	10	3	0	4	Potatoes.....	bushel	2	0 4 0
Carrots.....	bunch	0	6	0	0	Kidney.....	do.	2	0 4 0
Cauliflower.....	doz.	2	0	4	0	Round.....	do.	2	0 4 0
Celery.....	bundle	1	6	2	0	Radishes.....	doz. bunches	0	6 1 0
Coleworts.....	doz. bunches	2	0	3	0	Rhubarb.....	bundle	0	0 0 0
Cucumbers.....	each	0	3	1	0	Salsafy.....	½	bundle	0 9 1 0
Endive.....	doz.	2	0	0	0	Savoy.....	doz.	0	0 0 0
Fennel.....	bunch	0	3	0	0	Scorzonera.....	½	bundle	0 9 1 6
Garlic.....	lb.	0	6	0	0	Sea-kale.....	½	basket	0 0 0 0
Herbs.....	bunch	0	3	0	0	Shallots.....	lb.	0	4 0 9
Horseradish.....	bundle	5	0	7	0	Spinach.....	bushel	2	0 3 0
Leeks.....	bunch	0	2	0	0	Tomatoes.....	doz.	1	0 2 0
Lettuce.....	doz.	0	9	1	0	Turnips.....	bunch	0	3 0 6
						Vegetable Marrows.....	doz.	0	6 1 0

WEEKLY CALENDAR.

Day of Month	Day of Week	SEPT. 26—OCT. 2, 1872.	Average Temperature near London.			Rain in 43 years.	Sun Rises		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock after Sun.	Day of Year.	
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.				
26	TH		65.7	43.8	54.7	21	55	af 5	49	af 5	38	11	55	af 3	23	8	52	
27	F		65.3	44.6	55.0	24	57	5	47	5	morn.	26	4	24	9	12	271	
28	S	Rudbeck died, 1702.	65.1	44.0	54.5	22	59	5	45	5	45	0	51	4	25	9	32	272
29	SUN	18 SUNDAY AFTER TRINITY. MICHAELMAS	65.5	44.3	54.9	26	0	6	42	5	55	1	9	5	26	9	52	273
30	M	[DAY.	65.0	43.3	54.2	24	1	6	39	5	56	3	23	5	27	10	11	274
1	TU	Robert Bakewell died.	63.4	44.7	54.1	21	2	6	36	5	17	4	40	5	28	10	30	275
2	W	Royal Horticultural Society, Fruit, Floral, and General Meeting.	64.4	43.9	54.1	19	4	6	34	5	28	5	53	5	29	10	49	276

From observations taken near London during forty-three years, the average day temperature of the week is 64.9°; and its night temperature 44.1°. The greatest heat was 79°, on the 27th and 29th, 1832; and the lowest cold 23°, on the 28th and 30th, 1836, and 29th, 1842. The greatest fall of rain was 1.68 inch.

GLADIOLUS CULTURE.



HIS splendid autumn flower has in the present year been represented at the metropolitan exhibitions as it has never been before, and amateurs especially have far surpassed their previous productions. This result is mainly due to the spirited manner in which the culture of this flower has been taken up, owing to the liberal prizes offered by the Royal Horticultural and Metropolitan Floral Societies.

Not only is the Gladiolus desirable as an exhibition flower, but it is also very useful for in-door decoration, either alone or mixed with the long fronds of the commoner Ferns. Cut spikes may be placed in bottles of water and set in the conservatory, care being taken to hide the bottles with the foliage of other plants. Gladioli succeed well in pots, and grown in that way are specially adapted for greenhouse and conservatory decoration.

It is unnecessary to again enter into all the details of culture. The ground should be well trenched and manured in the autumn, so that it may have the benefit of exposure to all the winter frosts. Planting should be performed in March and April when the ground is dry. During hot weather in summer water well, and mulch over the roots with decayed manure. As soon as the spikes appear secure them to sticks; if this be not done at once a gale of wind may throw numbers of them on their sides, and cause irretrievable damage. The first flowers will appear about the end of July. I had the best spikes this year about that time and the beginning of August. Of course the time of flowering depends on that of planting, and the situation in which the bulbs are planted. By planting a few about the end of February in a south border, and selecting early-flowering sorts, such as Shakespeare, Reine Victoria, Madame Furtado, Princess of Wales, &c., the first spikes would come in about the 1st of July; and by planting successionally a continual display may be kept up until October. In planting do not omit a small quantity of sand round each bulb.

Upon the whole this has not been a very favourable season for the Gladiolus. Much rain and cold changeable weather told upon the plants up to midsummer, but I have not seen any disease amongst them; a few became prematurely yellow, but on pulling them up, as I invariably do, the bulbs were perfectly sound; indeed I cannot say that I have had any diseased plants at all since commencing the culture of this flower. Many valuable roots have died off when the plants were in full growth, but this, I do not doubt, is to be attributed to local causes, and not to disease. The best way is to pull such plants up, and throw them away; the bulbs in most cases will be sound, but all the fibrous roots will be found dead. I would advise all who have a good stock of bulbs to pull up and throw away all sickly-looking plants; this is now my own practice. When first commencing Gladiolus culture I used to pot all such roots, and in this way have saved them. The potting material used was

turfy loam, leaf mould, sand, and a small portion of decayed manure. The greatest trial to those taking up the culture of the Gladiolus for the first time is losing the plants when in healthy and luxuriant growth; it is bad enough to plant seemingly healthy and sound bulbs, and find that the plants do not appear above ground at all. The purchasers of new Roses, Dahlias, Pelargoniums, &c., if they give their plants anything like justice, are sure to keep them, losses seldom occurring. However, the enthusiastic cultivator will triumph over every difficulty, and will the more highly value those spikes which arrive at a high stage of perfection.

I would also draw attention to the lifting of the bulbs after flowering is over. The end of October is the best time to commence. Some cultivators lift the plants bodily up, and plant them in a dry place amongst soil, cocoa-nut fibre, or some similar material. I do not advise this plan; the best way is to cut the spikes over at once, and put the bulbs in a dry place, where they should be spread out, and then stored away. I wrap each sort up in paper separately, and place them all in a box, where they take up but little room. They should be kept in a cool place during winter, but do not let the frost get at them. In digging up the roots, the bulblets which cluster in greater or less numbers round the large bulbs should be saved by themselves, and potted at once, if the pots can be plunged over the rims in a cold frame during the winter. If this mode is not convenient place a small quantity of sand with each sort, and wrap the whole up in paper; they may thus be kept with the old bulbs, and if planted out in March, they will make very fine flowering bulbs the second year.

I will now make a few remarks on the new varieties of this season sent out by M. Souchet. From what I have seen here and elsewhere, there is but little new or good amongst them; indeed some of them are merely repetitions of the old sorts. Beatrix is a good white flower, and specially noticed by the Rev. H. H. Dombrain as being very fine in my stand at the Crystal Palace, but if I had labelled it Norma no one would have known the difference; and the spike of Beatrix was not nearly so good as that of Norma exhibited by Mr. Dombrain at South Kensington the previous week. Minerve is similar to Phidias. I plucked a single flower from each variety, and placed them together, and could not say which was the one and which the other. Virginialis, again, is rather paler than Mary Stuart, and much like it, but does not produce such a long handsome spike. Jupiter is new in colour—a fiery crimson—and if the spikes are not large, the flowers are, and it is an acquisition. Phœbus, Mr. Dombrain has spoken highly of. I have not seen it yet, but a spike exhibited by him at South Kensington did not seem to be honoured with a certificate. M. Souchet has sent out in former years many splendid varieties, and we owe him many thanks for them. I hope that those put in commerce from his establishment next season will maintain his reputation; the present batch has signally failed to do so.

There have been many very fine flowers exhibited

within the last few years that have been raised in England, but they do not seem to get into the trade, consequently it is hardly fair to comment upon them; indeed all the really good flowers have been faithfully described in these columns at the time they were exhibited.

I have nothing new to add as regards culture, but would like to read in this Journal the experience of other cultivators.—J. DOUGLAS.

THE POTATO DISEASE.

IN the remarks we are about to offer on the POTATO DISEASE, we do not intend to enter into any speculation on the origin or nature of it; neither shall we tread such tender ground as to speak with any affectation of learning on tissues and fungi, as some do with as much confidence as a Berkeley or a Mohl, but with less modesty. Our observations shall be confined entirely to our practical experience on the subject, and what we have to relate may be not new, but it is at least truthful and opportune.

After several years' experience and close observation of the coming and going of the Potato disease, we are quite satisfied of one thing, and that is, that there is no variety of the Potato which is free from liability to the attack. It matters not whether we take the old Scotch Dons, the Kentish Blue Eyes, the Dunbar Regents, Dalmahoy, and Walnut-leaved Kidneys, or the more modern varieties, such as Lapstone, Coldstream Early, Myatt's Prolific, Mona's Pride, or Paterson's Victoria, all in their turn have to succumb more or less to the ravages of this scourge. Some have attributed the liability of attack to the wearing-out of the old varieties, others to the high breeding of the new; but neither wearing-out, high breeding, or breeding "in-and-in" has anything to do with it, since an importation of tubers direct from what is supposed to be the native habitat of the plant proved to be equally susceptible of the disease, and was attacked with as great virulence as any of the cultivated varieties. Even the Tomato, which is an ally of the Potato, has also been attacked, as if to contradict any such supposition as that the impaired constitution of the Potato was the cause of its liability to the disease. The only safeguard against the disease—or rather the best avoidance, for there is no safeguard—is early planting of early sorts. For many years we have been in the habit of planting early only such varieties as we can clear off the ground by the end of July. It rarely happens that the disease ever appears to any great extent before the beginning of August, and although there may be cases where it shows itself earlier, it is never with that severity which we find at that period.

One of the best Potatoes is the Lapstone, and there is no variety suffers more from the disease. For the last three years circumstances compelled us to grow our crop of this variety in field culture and by late planting. The consequence was, that notwithstanding a strong desire to become possessed of a large quantity of seed of a really true stock of this valuable sort, we rarely ever obtained sufficient for the succeeding year's planting. This year the sets were planted early in March, and the crop cleared at the end of July, when of the abundant yield there were comparatively very few diseased. They have now been sorted over, and those selected for seed next year are spread out to become green. This greening of the seed by exposure to light we find to be a check to the attack of the disease.

There is one remarkable fact we have discovered during the greening process. All the diseased tubers which may have escaped notice when being taken up, and which would rot when stored, probably communicating infection to the healthy ones—these never become green, but retain their original colour, and shortly ferment and rot. They may be observed sometimes with a small hole on the surface from which froth is oozing out, and then putridity ensues. "Greening," if it did nothing more, enables one at least to secure sound seed; but it does something more, for we have observed that all the varieties the seed of which has been so treated, have this year scarcely suffered at all, while those not so prepared have. The variety which we found most attacked of the early sorts is Dalmahoy; but the Walnut-leaved Kidney, Winkworth Seedling, Coldstream Early, and Paterson's Victoria, were but little affected, while the Lapstones and the Pebble White were attacked much to the same extent as the Dalmahoy.

ARAUCARIA IMBRICATA.—Several trees of *Araucaria imbricata* are now covered with cones in the nurseries of Messrs. Lane

and Son, of Berkhamsted, and in every case the trees are diseased, the male catkins being produced on different trees from those that bear the cones.

A PLEA FOR GARDENERS WHO HAVE CHILDREN.

MOST readily and gladly do I accept Mr. James R. Pocock's challenge to say a few words on this subject. I never see an advertisement with the addition "no incumbrance," but I own I feel angry—I feel my blood boil; and I own, further, that it is one of those cases in which I feel "that I do well to be angry." In the increase of a people consists a nation's strength and security. In the declining evil days of the Roman empire its population was yearly diminishing, and soon followed its last days. So in modern times, the decrease of the numbers of the French preceded their utter overthrow, and the influence of France now goes for nothing in the councils of Europe; while, on the other hand, the German nation has grown great and taken the place of France—and why? Because every year its population has increased. So it is, happily, with Britain, and we now, because of our numbers, "dare to speak with our enemies in the gate." Therefore, on the highest ground, on the principle of patriotism, we have all cause to rejoice in our numerical increase, and, consequently, no one ought to stigmatise that increase by the word "incumbrance." I could fill pages on the blessing of children, how they tend to stamp out selfishness from the human heart. Possibly there may be a selfish father, but who ever knew a selfish mother? Children make a home; without them it is but a dwelling. The love of them, the love for them, makes a man work willingly and work well. The evening is looked forward to, the fireside is doubly warm and snug from their presence. The sweetest outburst of affection is a joyful tear, and that stands most usually in a parent's eye when his or her child has done the right and shunned the wrong. But I must restrain my pen, and come simply to the matter—the hindrance which gardeners sometimes find in procuring situations because they have families.

My advice is as follows. I ask other writers of this Journal but I ask especially my friend Mr. Fish, whose face I have had the pleasure of looking into, to give his view, and it is a subject on which, I am sure, he will write kindly and wisely. Others will, doubtless, now the subject is opened, write also their opinions, for it is one which comes close and home to gardeners, having to do with their very bread. I will subjoin a few remarks, and then, if picked from all the writers, a little sheet could be printed and published at the office of "our Journal." Copies could, for a mere trifle, be obtained at any time by gardeners when they needed them, as, for instance, when one was applying for a situation. A gentleman could not be asked to read through a long correspondence, even if it could be placed in his hands; but the applicant could say, "I have a family, which I trust you will not consider an objection; on this subject a little pamphlet is enclosed, which I should be greatly obliged if you would do me the favour to read." Such a pamphlet—it need only be short—I would gladly undertake to edit, under the supervision of our worthy chiefs, Mr. Johnson and Dr. Hogg. I think that giving my name to it would, as I am a clergyman, free the writer from the suspicion of any interested motive, for a clergyman could not be a candidate for such an office, and could only wish well to master and gardener.

I do not think that children are either a hindrance to a gardener or objectionable to a master, for the following reasons:—

1st. A man who has a wife and family is more likely, because of them and for their sakes, to be a moral and sober man. The fact of his being such is a benefit to both gardener and master.

2nd. Such a man is settled in life; he is no rolling stone, he is more content, is less likely to have a love of change, having made for himself and wife a position in a neighbourhood. Now, all masters know that their gardens are injured by a change of gardeners. It takes a man some time to understand fully a garden's capabilities, and to put it to the most profitable use in every respect. This, then, is a gain to the master. N.B.—I would advise all gardeners, if possible, to remain in the neighbourhood where their children have been brought up. If distress or sorrow comes they are known, and are sympathised with and assisted as they could not be in a

land of strangers; their children, perhaps, also are helped out in life.

3rd. I have noticed that pride in and a love of the profession are most felt by those who are sons and grandsons of gardeners. Old family gardening books are treasured and read. A man is proud of his calling; he delights in it; he will constantly be endeavouring to excel, and if so, is happy in his work, and does it well. This is, of course, a benefit to the master.

4th. When a gardener has sons, teaching them keeps up and increases his own knowledge. His mind does not grow rusty. He will be pointing out to his boy the best plans, noticing results of the experiments of others; will say, "Now, my boy, let us see what *THE JOURNAL OF HORTICULTURE* says this week," &c. This will be also a gain to his master.

5th. There is frequently the necessity of a boy in a garden in addition to the men employed, and boys without a turn for gardening are useless and a great trouble to gardeners, but a gardener's son would have a turn for the business; also, boys being indiscreet, are apt to carry much gossip into the village, often utterly untrue, from what they see and hear at the great house. This all masters and mistresses naturally object to. If, however, a gardener introduces his own son, no member of a village family is brought in, and he will, if wise, teach his boy that his business is to learn his profession, and that he is to see and hear, but carry no gossip from his masters. This, then, is a gain to man and master.

6th. A married gardener is more likely to be a keeper at home; he will not depend upon others, perhaps residents in the town or village near or distant, for what all people must to a degree have—viz., society. He will, therefore, be at hand when wanted; he will be near when a sudden frost sets in, and the fires must be lighted, and lighted quickly too. Here also is a source of advantage to the master.

Gardeners desirous of getting and keeping good situations should take pains and manage, with their wives, their children discreetly and well. If their cottages be in or near the garden, the children should be kept from playing in or straying into any part of the grounds which may cause annoyance. If the management and bringing-up be good, I cannot see that a gardener should be "punished" by loss of place, or failure in obtaining a place, because he has a family. On the contrary, I believe that, for the above reasons, the fact of his having a family will be a benefit both to himself and to his master, and the unsteady men of the profession that I have personally come across have been invariably single men. I hope Mr. Fish and others will give their advice. And finally, as a clergyman, a father of a large family, and a friend of gardeners, I protest against the word "incumbrance", being used to describe those who are helps, not hindrances, remembering in what Book it is written, that "children are a heritage and gift that cometh of the Lord."—WILTSHIRE RECTOR.

APPLES IN AN ORCHARD HOUSE.

THE finest specimen of the old Golden Pippin (perfectly true), we have ever seen, has been sent us by Mr. Bass, of Moat Bank, Burton-on-Trent. This was accompanied by a very handsome fruit of Cox's Orange Pippin. The Golden Pippin was in flesh most delicate, and in flavour exquisite. We do not know if any intelligent person lives who believes the popular fallacy that the old Golden Pippin died out in Thomas Andrew Knight's time. Literary Bohemians now and then unearth the old fallacy, and, doubtless, find some to believe it. There is no truth in the statement. The old Golden Pippin flourishes as vigorously as ever, and Mr. Bass whose great success in orchard-house culture has discovered in that treatment, that one of the fruits best worth cultivating is the old Golden Pippin. Not less beautiful, and not less exquisite in flavour, was a specimen of Cox's Orange Pippin grown in the same house.

CAN PLANTS COMMUNICATE DISEASE TO THEIR CONSUMERS?

If a poisonous substance is placed in the earth at the root of any plant—a succulent plant especially—will not poisonous infection be conveyed by the juices into the body of the plant itself, and impart a portion of it to any animal feeding upon that succulent? The idea has occurred to me that the abundant use of chemical manures, so much in fashion at the pre-

sent day, may possibly account in some measure for the prevalence of the cattle disease. Before the introduction of these chemicals, and when farmyard manure alone was used, I believe that these diseases among cattle were unknown; and I also believe that where the latter is exclusively used the animals are preserved free, except, perhaps, by contagion from others already infected.—C. P.

[It is quite certain that poisonous substances can be introduced into plants, both by their roots and other organs; but we are not aware of any poisonous substances used as manures. We should be obliged by experience-founded information on this subject.—Eds.]

PROPAGATING ZONAL PELARGONIUMS.

I HAVE been asked to give some details respecting striking cuttings of Pelargoniums of the Scarlet section.

The first consideration is the size of the cuttings. The larger the cutting, the larger under like circumstances will be the plant. The smaller the cutting the less room it will occupy. Middle-sized cuttings are generally the best, as most medium modes and ways are. I have not the least objection to place a single cutting in a small pot, or a dozen in a larger one, or five dozen in such a portable rough box as I have lately described (see page 205). I use the latter, and place the cuttings thickly, because room could not be found for them if separately or thinly planted. Whether they are placed in rather large pots or these shallow wooden boxes, if we are making several hundreds of cuttings at a time, they are thrown into two or three heaps, according to their size; as the future plants will not only do better but look better if each receptacle has plants of a similar height. Suppose some Geranium cuttings of one kind to be 7 inches, some 4, and some 2½ inches long, how much better they look when sized, the doing of which takes up no more time.

With regard to removing leaves from the cuttings or allowing the leaves to remain, I am asked, What is my general practice? The whole question lies in a nutshell. Provided you can place a cutting in such conditions of shade and atmospheric moisture as to force the leaves to absorb as much as they perspire, the more foliage that is left the sooner will you have a strong, healthy, well-balanced plant. If these conditions cannot be given, the more leaves left the more will the juices of the cutting be perspired, and dropping and flagging will be the result. This is not so conspicuous in a Geranium cutting as in most plants, as the succulent stem makes the cutting so much more independent. In general circumstances it is best to remove a portion of the lower leaves, and thus lessen the evaporating surface, leaving the top leaves to carry on the natural functions. This may be deemed the medium path of safety. In the case of a large number of cuttings which must be struck and wintered in a little space, say 2 inches from cutting to cutting, the leaves would only be in the way, would soon damp from crowding, require picking-off, and thus cause an expenditure of labour.

The cuttings are selected from the bed, taking them from parts where they are least likely to be missed, and with care a great many may be thus obtained without a stranger seeing where they came from. If taken off with a heel all the better, but with strong cuttings that must be dispensed with, as I prefer each cutting to have its point left untouched. We cut through at a joint in the usual way, removing the leaves and even buds there. The most of the upper leaves we also remove, snagging them short in, but not touching the buds at their base, and only a few of the smaller leaves at the top. I lay stress on not removing the side buds; these, though the cuttings be kept close together, will make a little show during the winter, and will grow still faster in spring when the cutting is not stopped but merely has its terminal bud taken out. The plants grow freely when they are afforded more room under protection in March and April. Strong Geraniums in beds, now like little shrubs, and which if taken up carefully would fill a large pot, were at the end of last September just such skeleton cuttings as I have described. Circumstances must regulate our operations. There is often so much trouble in moving these plants to get them some size before finally planting them out, that had I plenty of space I should be tempted to put each cutting into a small pot at once. However, many a one could keep a hundred cuttings in a moveable wooden box, taking up but little room in winter, when he could not find room for a hundred pots, and the cuttings could have more room under

protection in spring. Every mode has its own peculiar advantages and disadvantages.

I am also asked about drying the base of these succulent cuttings for twenty-four hours before planting them. Well, one may just please himself. I have tried the plan again and again, but I do not like the time that thus passes. Even with Milkworths, as Euphorbias, I prefer sticking the ends into powdered lime and sand, instead of allowing them to lie long. In the case of Geraniums I used to slightly shade the tops, whilst the cut end was exposed. Of late years I have inserted the cuttings as soon as made and roughly sorted into sizes.

Another question is, Whether they will do best in the open air, or with old sashes, frames, &c., over them? At the beginning of August I would prefer the open air, and if the foliage be reduced the cuttings will stand a great amount of sun. After the middle of September a little protection will help them, such as will throw off heavy rains.

The fifth inquiry was answered lately. "Whether prick-out in a border and lift, or prick-out into boxes and pots at once." On the whole I prefer the latter. Any tendency to free growth can be neutralised by comparative dryness, and when lifted and repotted there is generally plenty of withered-leaf-picking afterwards.—R. F.

BOILERS AT THE ROYAL HORTICULTURAL SOCIETY'S BIRMINGHAM EXHIBITION.

No. 2.

In continuing our remarks on the boilers at Birmingham, we come next to the horizontal tubular, of which there were three, exhibited respectively by Mr. Truss, Friar Street, Southwark Bridge Road; Mr. Messenger, of Loughborough; and Messrs. Dennis & Co., of Chelmsford, the last of which only was for competition.

lower series by means of a syphon. In the larger sizes of boilers hollow triangular-shaped furnace-bars are also introduced, through which all the water has to pass.

This boiler is no doubt a powerful one, but as the water has to traverse so much horizontal space, and as the flow-pipe is put at one end, the circulation will be much checked. This is a fault, however, common to all horizontal tubular boilers, and where a series of houses has to be heated from a large boiler, it is a matter of great importance; as if the circulation through the boiler is impeded, even though the tubes are so placed as to extract a great deal of heat from the fire, still those houses which are heated by the pipes furthest from the boiler require a proportionate degree more piping in order to keep up the heat, as the slower the circulation the greater the difference between the heat of the flow and return pipes, and the greater the quantity of piping required in those houses which are heated by the return pipes.

The next boiler we notice is a portable tubular boiler of Mr. Truss's. Truss's horizontal tubular boiler resembles a saddle boiler when covered with its external casing. Both the front and back are hollow, forming water-chambers, which are connected together by horizontal tubes, in the largest-sized boiler we saw twenty-four in number. The water entering by the return finds a stop halfway up the chamber, and is consequently compelled to traverse the lower pipes before passing into the other chamber, and thence by the upper tubes to the flow-pipe. The tubes where they join the front and back are made to butt against indiarubber prepared by a patented process, which is said to render it practically indestructible, and further, Portland cement is used to prevent leakage. It is claimed for this boiler that, owing to the indiarubber allowing for the expansion of the tubes, there is no danger of cracking.

The only horizontal tubular boiler entered for competition was one by T. H. P. Dennis & Co., Anchor Iron Works, Chelmsford. In this boiler a series of tubular pipes are arranged in the form of a rectangular pyramid or cone, the tubes being connected with an upright rising shaft or tube at each of the four

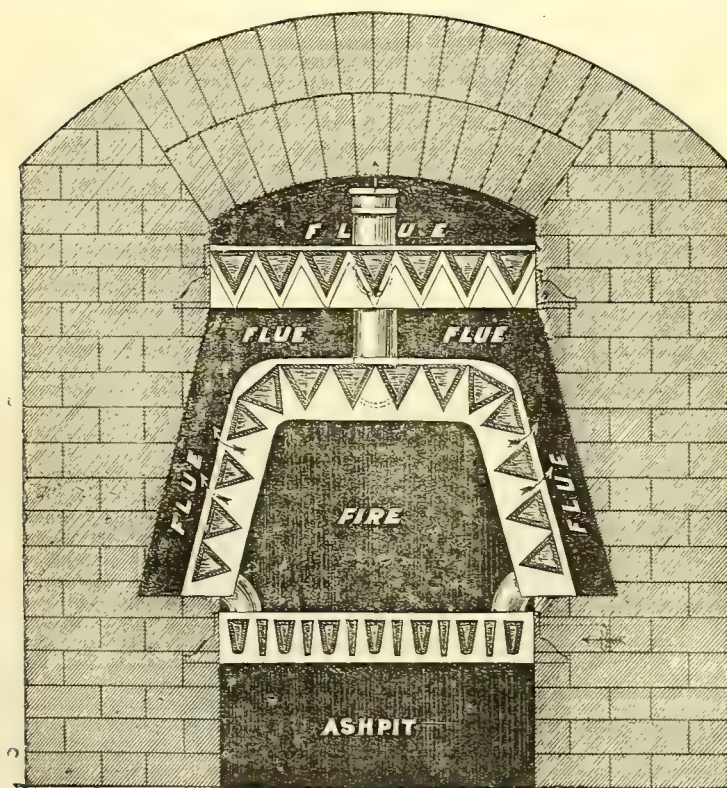


Fig. 1.

Mr. Messenger's boiler, of which *fig. 1* is an illustration, consists of parallel triangular tubes, with continuous water-spaces at each end. There are two sets of tubes, the lower ones being arranged in the form of a saddle boiler, leaving two horizontal openings on each side between two rows of pipes for the fire and gaseous products of combustion to pass through, which is then made to pass under and over another series of longitudinal triangular tubes laid flat, and which are connected with the

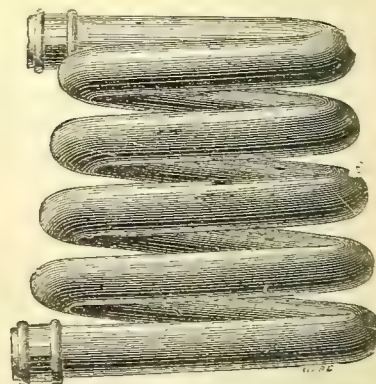


Fig. 2.

corners. There are two flows and two returns on the opposite sides of the under and upper rows of pipes. The fire plays through and all round the pipes, which are set at a little distance from each other. In this boiler much of the check to circulation which is common to many horizontal boilers is obviated by the four upright tubes at the corners, the length of the horizontal tubes being reduced very much at the upper part of the boiler, and the water has free ingress or egress at each end of the pipes, and need not necessarily traverse the whole length.

We in common with many others regret that a full report of the boiler trials at Birmingham has not been published, as it would be of great interest to the horticultural world; and although the trial was conducted under many adverse conditions, yet the summary of results arrived at would give much insight into the relative rapidity of circulation in different boilers.

We pass on next to a boiler entered for competition by Mr. S. Deard, of Harlow, Essex, and which deserves very honourable mention, as having the truest circulation of any boiler yet constructed. The large one exhibited by Mr. Deard was the first one ever made. The boiler is on the principle of a spiral pipe, the pipes in the boiler being of the same diameter as the pipes to be heated. The boiler is formed of close coils of cast iron pipes formed in half-segments of circles continuously jointed together by cast iron clips. At each end of the semicircular segments is cast a screw; the two segments of the circle are placed together, being previously turned and planed to a true surface, and the clips are cast on the pipes, so as to make a solid connected spiral coil (fig. 2). A T-piece is inserted in the lower part of the return pipe for the purpose of removing sediment when necessary. The boiler is fed by a furnace from the bottom and not from the top as most tubular boilers are, and so will burn any kind of fuel. The coils are set close, and, consequently, the patentee is enabled to put flues on the exterior by means of six cast iron flange plates, which are made to fit the coils of the boiler, and are inserted in the surrounded masonry, and the products of combustion are thus made to play up and down on the exterior surface of the boiler. We noticed that at Birmingham the boiler was tried at a disadvantage, as the flange plates were not there in time, and the separation between the flues had to be made by means of bricks, with a loss of heating surface represented by the comparative thickness of six rows of bricks or six thicknesses of iron plate. We think the apparatus deserving of great commendation, and in the hands of the inventor will turn out a very efficient boiler.

The same exhibitor had at work in an adjoining stand a small

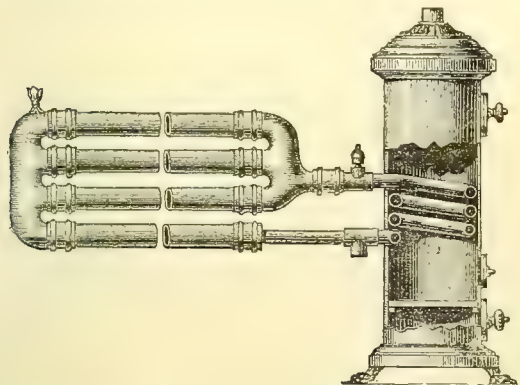


Fig. 3.

centrifugal heating apparatus, of which we give an illustration, and which obtained a bronze medal for its efficiency.

This combined stove and hot-water apparatus might be used with great advantage in a hall or corridor, the pipes being taken to heat an adjoining greenhouse. By means of proper dampers and regulators both in the chimney and ash-box either slow or rapid combustion may be set up, and the whole stove might be used inside the conservatory, as, if the coil pipe were made to surround the whole of the fire, there would be no fear of air being burnt by red-hot iron. The same boiler might be heated by means of gas, air to regulate combustion being supplied in each case by an outside pipe.

Our next notice will include the saddle boilers and modifications of saddle boilers, as tank, conical, and cylindrical boilers, though as there were so many exhibited we fear we cannot give a full description of all. Those of the competitors who made notes of their own boiler trials are requested to forward the same to the office. We have already notes of two. We do not necessarily intend to publish them.

CIFERIS AT LINTON PARK.

I beg to thank Mr. Fleming for having, at page 205, given us the dimensions of some of the important Conifers at Dropmore, as we are thus enabled to compare notes and to see how far our specimens are behind those in the much-famed Dropmore collection. With the exception of Bicton there is no place where this class of plants has been so extensively cultivated as at Dropmore, and I am not sure that some of the specimens there do not exceed those in its rival's more favoured climate. I now

purpose giving such short notes on some of the specimens here as will enable the reader to judge of their growth.

PINUS INSIGNIS, planted 1844, is now 64 feet 6 inches high, feathered to the ground. The diameter of the branches is 51 feet, and the girth of the bole at 4 feet up, as taken at the most slender part between the branches, is 8 feet 2 inches. This tree, I may observe, lost its leader about 1848, and remained three years without one. Since then its growth has been very rapid. It did not suffer in the least in the winter of 1860-61, and but very slightly (hardly perceptibly), in that of 1866-67; although another specimen of the same kind not so large then suffered much. It is a fine tree, has coned for many years, but since it commenced doing so and producing the catkins which precede the cone, it has to a certain extent lost that deep emerald green which gave it so important a character when about 30 feet high. I find this is also the case with other young trees of the same species. Although the tree referred to is in the best possible health, it is not of so fine a green as it once was, and a specimen of *P. austriaca* near it that was once its inferior in that respect, is now its equal if both are looked at from a distance of 100 yards off. I may remark that *P. insignis* exceeds in size any of the Scotch or Silver Firs that were planted as a screen, and as nurses to the pinetum. To show that this rapid growth is not confined to the tree alluded to, I may state that one planted in 1855 is now 46 feet 6 inches high, feathered to the ground, healthy, and vigorous; while others planted at the same time are nearly as large.

PINUS PONDEROSA.—As Mr. Fleming does not mention this, I apprehend the tree is either not a good specimen or is confounded with *P. macrocarpa*. Here, however, it is the finest of the long-leaved species, the average length of the leaves being 10 inches with three in a sheath; the general hue of the tree a darker green than the Scotch Fir, although not so much so as *P. insignis*. In many places fault is found with it for its lack of foliage, and the decaying leaves being persistent; here the latter charge is unfounded, for as the tree is healthy and vigorous it throws off its decaying foliage, and its naked and formidable limbs stand out boldly, each with a dense tuft of most sturdy foliage at the end. Our tree is 55 feet high, and retains most of its branches from the ground, but as they chiefly point upwards it has not the dense habit of *P. insignis*. It was planted in 1844, and has only once shown symptoms of coning. It is a noble and deserving tree, quite equal to *P. Benthamiana*, of which, however, we have not a large specimen.

PINUS AUSTRIACA, 54 feet 6 inches high and feathered to the ground, but more cylindrical in shape than most others. This was also planted in 1844, is a fine tree, and from what I have seen of it elsewhere, seems to be one of the most desirable of its class. Its deep green hue and upright timber-like bole recommend it alike for use and ornament; and I have seen it thrive well on very poor ground. In a young state it is very bushy, but, in fact, most other Pinuses of a similar kind are thus in their early growth.

PINUS EXCELSA.—Upwards of 40 feet high, and quite 55 feet in the spread of its branches, forming, in fact, an immense bush of dwarf conical form; for it starts with a decided leader. There appear to be two varieties of this, or it may be that they are two distinct species, one of them having its spring buds enclosed in scales of a bright rosy pink colour, the other one plain green, there being no perceptible difference in colour, habit, or character of foliage. Both bear very long cones of a purplish colour, and hanging downwards; occasionally the cones are in pairs, but oftener are produced singly. The rich silvery grey foliage is in a great measure pendulous; and differing as it does from most other Pinuses in its glaucous hue, this species is of great value in a collection; it is also harder than many kinds. Our tree was planted in 1844.

PINUS CEMBRA, 54 feet 6 inches high, was probably planted about 1835. It is a pretty cylindrical rather than a conical form, and has leaves of the same fine texture and silvery-grey hue as the Weymouth Pine, from which, however, it differs in many respects. It is a distinct Pine well worth growing, and no doubt one of the very hardiest.

PINUS ALBERTIANA.—Of this there is a promising tree only planted in 1868, and now 12 feet high, resembling in some degree the Hemlock Spruce, but of more vigorous growth. It is likely to form an excellent addition to the pinetum, being evidently very hardy, and starting at once into the tree form, not lingering on as a mere bush.

PICEA PINSAP, 44 feet high, densely branched to the ground, forming as compact a cone as the best-formed Wellingtonia, the closely-packed mass of twigs and foliage concealing the bole nearly the whole way up. This tree was planted in 1844, and during the last six or eight years has grown very fast. It has only once had a few cones on it—namely, in 1869, and these in some degree resembled the cones of *P. cephalonica*. Most persons who have seen this tree consider it to be the best of its kind in England, and as Mr. Fleming does not mention it in his list, I conclude that there is not a remarkably good specimen at Dropmore. It is not the class of tree to please planters who

look for immediate effect, for its progress for some years after planting is tardy, even in the most favourable situations, but once established, and a fair start made, it grows as quickly as most. The tree here is one of the finest in the grounds, of a deep dark green hue, with a conical outline, almost as close and as true as if pruned into that shape, though the knife has never been used. Its close compact branches resting on the ground have killed all herbage as far as they extend. I shall be glad to learn the height of specimen trees of this kind in other places.

PICEA CEPHALONICA.—This differs from the preceding in its leaves being longer and more pointed, and the habit lower. The largest tree here is 50 feet high; it is also branched to the ground much wider, but not so densely as *P. Pinsapo*. It was planted in 1844, and has coned several times, the cones being somewhat smaller than those of the Silver Fir, but more in clusters, and often covered or nearly so with resin. Like *P. Pinsapo* and many others of the *Picea* family, it is slow in making a start, but grows fast enough after.

PICEA NOBILIS, 40 feet high, also planted in 1844, lost its leader in 1847, and was eight or nine years without one, when it pushed two, and, one being taken away, the other is as straight as a ramrod, and in every respect uniform. The tree has for several years borne a great number of very large cones, often more than a dozen in a cluster, with some good seed in them, but the bulk abortive. It is a fine tree, its silvery hue attracting everyone's attention, while the huge well-formed cones are very conspicuous. For several years its growth upwards averaged fully 3 feet, but it has not been so much since it begun to bear cones. It is, nevertheless, a fine tree, but I believe there are many finer, the situation possibly being too dry for it.

PICEA WEBBLIANA.—The tree is 37 feet high, and was planted in 1844. I do not mention it as being of any remarkable size, but to ask for information, as it is the only specimen amongst several which is at all healthy, and is not by any means so robust as many other species near it. We have had several trees that have succumbed altogether or nearly so. When in health its appearance is good; its dark green leaves are more silvery underneath than most kinds, while its noble cones of a rich purple black, so widely different from everything else, give it a claim to attention which no other species possesses. It is, however, delicate; its young shoots are nipped with spring frosts, and it often loses its leader, so that it is seldom a good tree is met with, and it is possible the specimen here mentioned may be as good as the generality. It is not a tree that I would recommend, except for some special situations, and must leave to others the task of selecting them.

PICEA LASIOCARPA.—This is nearly 17 feet high, and was planted in 1865. It is a promising tree, and with *P. Lowii* and *Parsonii*, which I take to be all one, it is the largest-leaved of the *Piceas*. The leaves being also curved upwards (awl-shaped), differs much from those of *P. Nordmanniana*, which curve the reverse way, besides presenting other points of distinction. The tree is not so densely clothed with foliage as the last named species.

PICEA NORDMANNIANA, planted in 1865, is upwards of 12 feet high. It appears to grow fast, and is a desirable tree, but the specimens here are small, and my only purpose in alluding to it is to inquire if when it attains greater age it resolves itself into the common Silver Fir. I have heard of this being the case, but am not able to offer any opinion myself on this point, as all the specimens here are sufficiently different in their present condition to entitle them to be considered to belong to a distinct name.

PICEA MAGNIFICA, *P. AMABILIS*, AND *P. GRANDIS*.—We have specimens of these and other species, but not very large; and the distinctions amongst them not being clearly defined, I refrain from mentioning them further.

TAXODIUM SEMPERVIRENS, 37 feet high; planted in 1852. A fine tree, very hardy, and not particular as to soil, as we have more than one specimen succeeding tolerably well, growing in the most unpromising position possible. Its thick spongy bark is singular.—J. ROBSON.

(To be continued.)

HEATING BY HOT WATER AND HOT AIR.

I AM afraid Mr. Housman and I must agree to differ. He will think me, no doubt, very obstinate, but I fail to be convinced. I speak from experience, having a hot-air heating apparatus which warms a greenhouse next to my house, and also my hall and staircase. The firebox is made of fireclay lumps inside a brick chamber, and I pass the products of combustion through four rows of 4-inch pipes, three pipes in each row, representing in all 48 feet of 4-inch piping within the chamber. The chamber is fed direct by a current of outer air passing over evaporating-pans. I can obtain plenty of heat, but it is not economical, as, in spite of the 48 feet of horizontal iron piping through which the smoke has to pass, the chimney is too much heated. This I can test very well, as the first part of the chimney after leav-

ing the pipes in the chamber is through a 9-inch fireclay pipe in a passage in my cellar. There is no error from want of a tall shaft, as the chimney is a very tall one, at least 45 feet from the level of the firebox.

I find no difficulty in saturating air, after it is heated, by passing it over evaporating-pans in the flues or pipes, by which it is conveyed to the place to be heated; but if cold air is to be drawn by rapid currents over evaporating-pans previous to its being heated, it will be found almost impossible, in spite of Mr. Housman's wet and dry-bulb thermometers, to saturate it. It is of no avail towards extracting the heat from the gills of Mr. Housman's stove to saturate the air after it is heated, the object aimed at being—as moist air is a better conductor of heat than dry—to supply moist air to the stove to extract the heat. As heated air is capable of containing far more moisture than cold air, and the proportion of vapour it can contain increases in accordance with the heat, so it is easy to saturate air with moisture after it is heated, by supplying plenty of water in the pipes it has to traverse. So little fuel is really required to create a draught, that the practical loss of heating power in creating the draught is a matter of small moment; and as high chimneys conduce to more rapid combustion, they are, if not properly attended to by regulating the dampers in the flues, &c., more likely to produce waste of fuel than economy, especially in heating horticultural boilers. I likewise do not agree with Mr. Housman's argument, that with the same amount of fuel burnt the draught would be twice as quick through a 12-foot chimney as a 6. Mr. Taylor's evaporating-troughs are in my mind very different to Mr. Housman's. The house does not depend for its heat on the air admitted, because the troughs are on the top of the pipes which heat the house. Mr. Taylor's troughs merely ventilate the houses with air which is heated and made moist by passing over troughs before it can enter the house, and he has a small ventilator in the roof. Theoretically it sounds right—that if air is to be allowed to escape, it is better that cold air should escape rather than hot; but the fault I find with Mr. Housman's system is, according to his own statements, it is made to depend on rapid currents of air impinging on heated gills of iron, and consequently there must be also a rapid exit of air and consequent loss of heat. This is very different from slowly changing the air in the house by means of such appliances as Mr. Taylor's. I, for one, do not believe in the necessity for plants living in such draughts as some of the modern appliances for ventilation are suggestive of; they do not consume oxygen so rapidly as to require this constant change.

With regard to the loss of heat in creating a draught, and the impossibility of economising the heat used for that purpose, I can assure Mr. Housman that I have put up a heating apparatus in a church, where there are two rows of 9-inch fireclay pipes set hollow inside a wide flue, which takes the products of combustion from a firebox made of 3-inch fireclay lumps. The first pipes from the firebox are iron, and every fourth one of the length of the pipes is iron. The length of these pipes before they enter the chimney is about 70 feet, and so completely do they extract the heat, that the pipes near the fire may be red-hot, and yet there is hardly any perceptible heat in the pipes furthest from the fire before they enter the upright shaft. My object in putting up the heating apparatus was to see whether it was not possible, by means of a long horizontal shaft of fireclay pipes only three-quarters of an inch thick, to economise all the heat caused by the products of combustion. A small stove is used at first at the base of the upright shaft, which is not a tall one, to create a draught, but when once the fire in the heating apparatus is going, there is no further necessity for the stove, and the fire is allowed to go out; the draught is still good, even though the smoke, or rather gases, are so nearly cold by the time they reach the upright, that the waste is practically nil. It is this which leads me to doubt the practical accuracy of Mr. Housman's remarks, that the heat necessary to cause a draught cannot be used for the further purposes of heating; and though there must be a certain waste of heat in a chimney, yet it can be reduced to such a minimum as to prove of no great moment. If anyone wishes to test the relative power of conduction, or of extracting heat from iron, between water and air, he has only to heat two iron bars to the same degree of temperature, and see how much sooner the bar will cool when plunged into water, than if left in air of the same temperature as the water. The true value of water as a means of conveying heat is, that it has such power of storing up latent heat, and that it parts with it slowly. The best conductors do not necessarily cool the fastest, even if they heat the soonest. However, this is entering on a wide subject—in fact, the discussion between Mr. Housman and myself is one about which there are many differences of opinion both practically and theoretically, though I believe, if we had the opportunity of discussing the matter together, we should agree in the main points at issue, but not in the details.

I forgot to add that when I spoke of the products of combustion playing on to fireclay lumps, I alluded to the fire itself. Mr. H. makes a distinction between the ignited fuel and the products of combustion. I was contrasting the difference

between the fire in his apparatus and that in a horticultural boiler where the ignited fuel comes in direct contact with the iron, which never rises above the temperature of boiling water. In his apparatus it comes in contact with fire lumps, which I quite agree with him is the right thing for all air stoves, but it is here they contrast disadvantageously with boilers. Thanking Mr. Housman for his courteous reply, I am—YOUR REPORTER.

[Here this controversy must close.—EDS.]

ADARE MANOR.—No. 3.

COUNTY LIMERICK, IRELAND.

(Concluded from page 233.)

THE ground at the entrance front of the Manor is the Knoll, that is so effective in the picture as seen from the old Abbey. Here it is undulating and broken-up by large mounds, on which stand some of the great old Elms. Here there are some good masses of shrubs and some promising evergreen trees. Until Mr. Laidley took charge of the grounds at Adare the planting of Coniferae was a failure. This arose from the peculiar subsoil, which is a white limestone gravel of a very hard texture. On this natural formation the English Elm is the only tree that grows freely and to a good size, and Mr. Laidley deserves the highest credit for the successful way in which the ornamental trees are growing up. The success has been accomplished by excavating large quantities of the subsoil, and securing good drainage, and substituting soil suited to the growth of the trees to be planted. The trees here referred to have been about ten years planted, and were then small; yet a Wellingtonia is now 21 feet high with fine branches; a Cupressus macrocarpa 30 feet high and 20 feet through the branches. Others are equally thriving. Some Cedars of Lebanon on this ground were in a sickly state, the points of the young shoots dying back, but they have now a fine healthy appearance. The Abies Douglasii is the most difficult to deal with on the limestone formation, and with few exceptions this tree is not thriving at Adare. A fine broad walk running parallel with the terrace garden, and separated from it by a green ramp, leads to the kitchen garden and pleasure grounds south of the Manor; on each side of this walk is planted, at 20 feet distant, fine pyramidal specimens of Gold and Silver Hollies. At about 200 yards from the Manor there is on a rising ground a group of good Cedar of Lebanon. These trees are quite a feature, but their future beauty will be greatly impaired if some of the Sweet Chestnuts are not cleared away from them.

Near this is a broad-headed gnarled Oak called the Killarney Oak; the circumference of the branches is 90 yards. This is a hoary-looking tree, but its age is only about fourscore, as we find inscribed on a large block of stone that "I left the woods of Killarney in 1791 in the pocket of Sir Richard Quin's shooting jacket. Dear owner of Adare, don't put me into your pocket." Just under the Cedar branches is a group of peculiar interest to the antiquary; this is a collection of Ogham stones, presented to the late Earl of Dunraven by Mr. Shine Lawlor, on whose property they were found in Co. Kerry, in an old Danish moat. The stones now stand as arranged by the late Earl, assisted by the late Dr. Petrie of Dublin, and Dean Graves, now Bishop of Limerick.

At this spot are some fine trees of the common Yew, which luxuriates in the stiff limestone formation; but here we find the Araucaria a failure. Never will that tree thrive on that retentive soil, unless special means are taken to provide the tree with its natural requirements, which, singular to say, the late Earl did not believe.

Further on the enclosed pleasure ground extends considerably, and great part of it has been planted within the last twelve years. Here is a fine old specimen of Pterocarya caucasica, and we notice a good Ailanthus at least 30 feet high, which was transplanted two years ago, and is growing as if never moved. In this new ground is an extensive collection of rare trees and shrubs. Thriving well is a large plant of the elegant Cupressus Knightii, a species which should be largely planted in Ireland. Before passing from this ground, the outside of the garden wall deserves notice for its peculiar battlements and the great old Magnolias which, up to the winter of 1860-61, were a great feature of Adare; the old tree-like stems have thrown up suckers, which are again flowering as of old. In passing through this part of the grounds it is gratifying to see the Pinus insignis in such a fine thriving state; and we learn a most important lesson from Mr. Laidley's practice—namely, to plant this rapid-growing tree in a seedling state. When the P. insignis is planted in an exposed position, it will rarely stand the wind unless planted when young.

We now follow a drive leading towards the river through the open park, and enter a wood of considerable extent, where we are at once attracted by the extraordinary fleeces of lichens on the trees. Some years ago Mr. Laidley wrote some very practical articles on the injury done to trees by such excess of lichens, but we cannot enter into this matter now further than to state that the plantation is seriously injured by the lichens.

On a strip of ground close by the river, and about a mile from the Manor, we come upon a plantation of Coniferae, of which the great Californian Cypress is the most remarkable. This ground lies between the hydraulic ram which supplies the Manor with water and the river, and is covered for a large part of the winter with water, yet the tree is in the best of health; and so pleased was the late Earl with the unexpected growth of the Cupressus macrocarpa in such a position, that he greatly increased the planting of this tree up the river until we come on an open meadow, where are planted Evergreen Oaks in groups. This meadow is backed by a rising pasture, in which is the wood, where stand the ruins of the house built by a son of "Shady Quin," and here still remain the ancient rows of Elms.

We are now at the Islands, round which the river divides in a very peculiar manner, and the three streams are crossed by flat iron bridges. The first island stands nearly in the centre of the river, and is planted chiefly with groups of Poplars, Golden and Scarlet Willows. On the other island is planted a variety of Cupresses, Piceas, &c.; and from the centre of this island is seen the historical tower of Dysart, which stands on the farm of Messrs. Christy, the celebrated short-horn breeders. This tower is 67 feet high, and is said to have been founded by a friar in the eighth century, and tradition says the master builder was a woman.

We are now over the river and pass through some good Beech trees, ascending to a plateau, from which there is a beautiful view of the valley through which the river flows; and the Manor and old Abbey, divided by the great Elms, also present a grand picture. The drive leads on to Mount William opposite the Manor, where the young plantation is most interesting. Here are striking groups of Sequoia sempervirens and Cupressus macrocarpa, also fine thriving Pinus insignis, and promising trees of Abies Douglasii. Farther on we come on deep old gravel pits well planted with choice trees and shrubs. From here we get the splendid view of the Manor (see page 232), with the terrace wall and fine Cedar tree. Again we sweep round on the old Abbey and cross the bridge, turning to the right on the drive towards Adare village, and coming in front of the massive ruins of Desmond Castle. We can scarcely move a step without being reminded by some monument of the stirring events of this historical place, while we stand looking at Desmond Castle, the old ruins and burying ground near it; the Augustinian Abbey, now the Protestant Church; the Trinitarian Abbey, now the Roman Catholic chapel, and founded by Maurice second baron of Offly in 1230. We are asked to note a stone at our feet, which had been placed at an old Ash tree now decayed, telling that beneath the roots of this tree the valuable silver plate, &c., was secreted in the troublesome times of 1798. We must now leave this group of ruins by stating that in 1599 the Earl of Essex slept within the ruined walls of the Augustinian Abbey when he came to Ireland to assail the Geraldines.

We now reach the main walk, and sit where we may suppose Griffin sat when composing the following lines—

"Oh sweet Adare! Oh lovely vale!
Oh soft retreat of sylvan splendour!
Nor summer sun nor morning gale
E'er hailed a scene so softly tender."

This walk leads us on the highest ridge of the grounds into the kitchen garden. It is a plain square, with heavy stone walls and subdividing walls. The fruit houses are of a plain substantial kind, and there are useful ranges of pits; but the glass structures at Adare are not in proportion to the requirements of the family and the dignity of the place. The gardening, however, is not the less meritorious. We have never met with a higher combination of gardening talent combined with unwearied industry than we meet in Mr. Laidley.

POTATOES DISEASED AND UNDEASED.

PERHAPS it may interest some to know that I have this day (September 18) dug up Potatoes (Sutton's Flourball) without a single diseased tuber; though Paterson's Victoria on one side and Racehorse on the other close by, are very bad indeed. I find one thing worthy of remark, that though that red Potato is free from disease, a great many of the finest tubers are honeycombed out by a grub, which is not seen in the other kinds. This is the case in two gardens that I have more than a mile apart, with soils quite different.—T. S. C., Bristol.

[We wish our readers would state to us the varieties they find least diseased, as well as those most diseased. If a grub is sent to us we may be able to identify it.—EDS.]

FRENCH LOVE OF FLOWERS.

AN American in Paris writes as follows:—"The French woman must have her daily supply of flowers even if she is compelled to stint her table to obtain them. When she purchases the substantial for her breakfast she is sure to take

home with her a bouquet of flowers. You will scarcely pass a window at an inhabitable house where, from the basement to the pens erected upon the roofs, six or seven storeys from the ground, there is not a display of flower-pots. Having secured quarters high up in the Louvre we can look down upon the upper storeys of the neighbouring houses, in each room of which there appears to be a separate family. They seem to be tailors, and at daybreak in the morning the men are plying their needles, and the women preparing for breakfast and arranging their bouquets for the breakfast table. The cultivation of flowers in all the palace gardens and squares, and even by the street sides in the Champs Elysées, is carried to perfection. The Luxembourg garden is the finest display of flowers cultivated in the open air I have ever witnessed, and it is thronged every evening with admiring visitors. So also at the Jardin des Plantes, which we visited this afternoon. It was crowded with visitors, and the flowers attracted more attention than the great exhibition of the cattle of the field, the bird of the air, the beast of the jungle, and the fish of the sea, which are here collected, and open free to the inspection of the public."

ERIDGE CASTLE,

THE SEAT OF THE EARL OF ABERGAVENNY.

ERIDGE CASTLE is an elegant modern building with embattled walls, and numerous towers and turrets. It is rich in elaborate architectural embellishments, beautiful in its graceful outlines and in the contrast of the deep green of the Ivy gradually overspreading and concealing its white walls, and certainly very striking in its pleasing freshness of aspect, so bright, so entirely in harmony with the scenery around it, and so different from the stern repellent state and grandeur of those old feudal structures—

"With towers vast,
Broad, massive, high, and stretching far,
And held impregnable in war."

Eridge Castle is finely situated upon a turf knoll, having a few fine trees and shrubs skilfully dispersed over its trim surface, and the ground slopes gently downwards till it meets the park. The view of the park from a terrace on the south front is very fine. Immediately in front the turf dips downwards to the winding shores of a lake of about twenty acres, and beyond it rises again in grand irregularity, now spreading out in ample breadth, overshadowed at parts by noble old trees, and then ascending till it is lost in the thickly-wooded slopes of Saxonbury Hill, which, with a tower crowning its summit, forms a majestic and fitting background to a scene of singular and uncommon beauty, which has been described in a poem not without enthusiasm, from which the following is an extract:—

"'Tis beautiful, this sylvan scene around!
What sunny glades! what darkening woods abound!
And sloping lawns, where browse the sprightly deer;
And crystal lakes, where swans majestic steer.
On tow'ring heights the Birch waves in the gale,
And ancient Oaks befriend the sultry vale.
The Hawthorn bush upon the extended plain
Adds its wild glories to this proud domain.
Whilst Beech, and Larch, and Scotia's sombre Pine,
Form pleasing groups, or show in martial line.
Here, opening vistas glow with brightest green;
There, bonnie Heath on distant hill is seen—
The whole how grand, harmonious, and chaste!"

This grand old park is supposed to be the oldest recorded deer park in England; that the adjoining woods are extensive may be inferred from the fact that they are intersected by seventy miles of grass drives.

It is in the Sussex parish of Frant. In Anglo-Saxon times the manor belonged to Godwin, Earl of Kent, but the Norman Conqueror seized the estate and granted it to his follower, the Earl of Mortaigne. There was a large mansion here from the earliest times, and members of the Royal Family resided here until the time of Charles I., but it had long before passed to the family of the Nevills, Earls of Abergavenny. It belonged to them when Queen Elizabeth was a guest here in 1573, and "Henry Nevill, Lord Bergavenny, who died in 1586, was a favourite of the Queen." It came to the Nevills by Sir Edward Nevill marrying, about the year 1450, Lady Elizabeth Beauchamp, heiress of Lord Bergavenny, created Earl of Worcester by Henry V. Tunbridge Wells owes much to Eridge Castle, if it be true that the efficacy of its mineral waters was accidentally discovered by Dudley, Lord North, who was staying at the Castle, suffering from a lingering complaint. This was in the reign of James I., and his lordship effectually made known the sanitary powers of the waters.

The lawn is extensive, and sweeps boldly around three sides of the Castle. On the north side it has an abrupt descent, with a large semicircular opening or chasm in one part of the face of the bank, the steep irregular sides of which are planted with Rhododendrons, and will eventually form a picturesque and important feature, thus bringing into prominence a portion of the dressed grounds which formerly could hardly have been worthy of the name. This, I should observe, is one of many important improvements being gradually effected under the able supervision of Mr. Rust.

Numerous older groups of Rhododendrons dispersed among other shrubs were very luxuriant. The shrubs and trees generally were very vigorous, notably a fine example of Weeping Birch and some very large and symmetrical Portugal Laurels, which present the appearance of a beautiful mound of deep green glossy foliage. Of this Laurel it may very justly be said, that when unhealthy nothing can be more unsightly; but when thriving, as at Eridge, there are few shrubs that can compare with it, either for beautiful foliage or symmetrical growth. There were, besides, numerous flourishing examples of Araucaria, a *Picea grandis* planted by Mr. Disraeli, some black Italian Poplars curiously laden with immense clusters of Mistletoe, and some very handsome Wellingtonias upwards of 30 feet high, raised from seed sown in 1851.

The flower garden is enclosed on three sides by the Castle and a conservatory. The flower-beds, of medium size and simple form, were in full summer beauty. Very little subdivision was observable, most of the beds containing a distinct mass of one colour. Numerous vases, elevated on pedestals and well filled with plants, contributed very materially to the appearance of the garden. These vases form a charming avenue, with a path paved with broad flagstones, and edged with neat terra-cotta tiles, leading to the conservatory. By the side of another similar path was a fine ribbon border, having a row of *Echeveria secunda glauca* next the terra-cotta tiles, then a fine belt of *Alternanthera maculata*, with pretty foliage of mingled crimson and orange, followed by a row of *Lobelia pumila grandiflora*, each plant having the appearance of a pretty compact mound of blue enamel, for the plants were arranged with excellent taste—just far enough apart to admit of their touching each other when in flower, without the growth becoming so blended as to affect their outline. With *Lobelia speciosa* we are content to obtain a compact even line of blue, but in the pumila section we have colour of an equal depth and richness, and a beauty of form that renders individuality very desirable. The fourth, or back row, was of Mrs. Pollock Pelargonium.

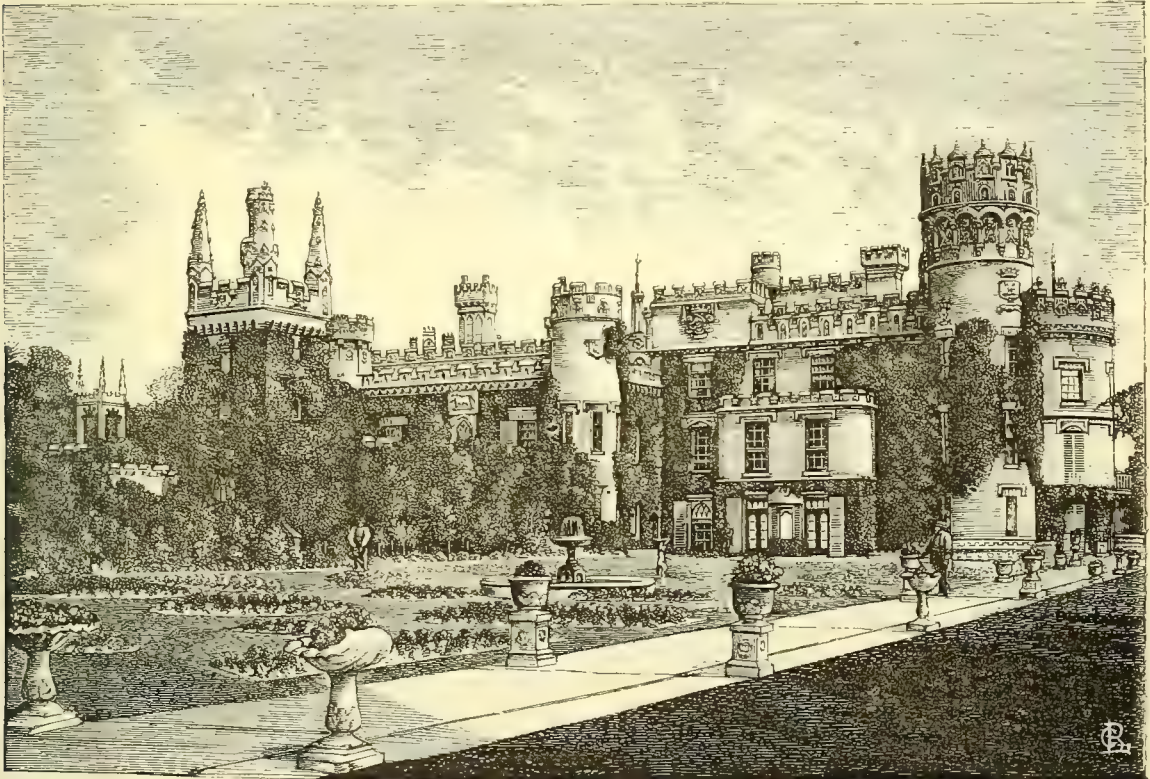
The conservatory, by Ormson, is of plain exterior, but an excellent structure, well adapted to its purpose, as was clearly shown by the excellent condition of its occupants, more especially the climbing plants, which were in great beauty. They were trained beneath the roof on pendant chains in the form of festoons, from which trailed flower-laden branches in charming profusion. There were the fine old *Tacsonias mollissima* and *manicata*, the beautiful *Van-Volxemi*, never so fine as when seen thus suspended, the variegated *Cobaea*, *Clematis* Lady Caroline Nevill, the sweet *Mandevilla*, and a fine blue mass of that excellent but much-neglected plant *Plumbago capensis*. Beneath and among the branches of the climbing plants were hanging-baskets suspended from the roof, and tastefully filled with a brilliant mixture of plants. These, seen as they were among the somewhat wild yet graceful growth of the roof plants, had a charming effect. Two fine groups of *Camellias*, surrounded by a variety of interesting pot plants arranged in excellent taste, occupied the centre of the building, and various plants in flower, elevated on stands and brackets, gave to the scene a pleasing air of lightness and grace.

A winding walk, fringed with Rhododendrons, leads to a more secluded part, where was a ribbon border 700 feet long, having a sheltering belt of shrubs behind, and agreeably relieved by a considerable breadth of turf stretching along its front. The border contained six rows; the first of *Ageratum Imperial Dwarf*, bluish grey; the second of *Pelargonium Little David*, scarlet; the third, *Verbena venosa*, purple; the fourth, yellow *Calceolaria*; the fifth, *Iresine Lindeni*, crimson; and the sixth or back row, *Anthemis feniculata*, a species of *Chamomile*, a capital plant for the purpose, having serrated foliage and simple flowers of a pure white. This arrangement, composed as it was of simple yet most suitable materials, had an excellent effect. *Ageratum Imperial Dwarf* is really a fine dwarf plant, easily raised from seed, as is the *Anthemis*; and I believe I am correct in stating that the whole of the plants,

both of these and *Verbena venosa*, were seedlings, so that the materials for such a border are within the reach of those having very limited glass accommodation. Taken as an example of a clever arrangement of plants easily obtained and cultivated, and producing a strikingly beautiful effect, it was very praiseworthy. Apart from this consideration such displays do not very much interest me, and I must confess to a decided preference for herbaceous plants in borders so situated. Very rare, indeed, is it that one meets with a really good and well-arranged collection of herbaceous plants. Out-of-the-way borders, in which a few of them are suffered to exist in miserable unkempt disorder, are common enough; but they are surely worthy of something more than this, for they are so beautiful and interesting, that I do not doubt eventually due attention and prominence will be given both to herbaceous and Alpine plants.

Fine views of the beautiful undulations of the park open

out in rich variety all along the ribbon border, beyond which a walk winds in pleasing curves between high turf-clad banks downwards to the lake. Upon the top of each bank is a line of Conifers planted in pairs by members of the family—that is to say, any plant on one bank is of a similar kind to the one opposite it on the other bank: as these gain size, the beauty and finish of this part of the grounds will be much enhanced. Another feature of interest very near this walk is a Rose garden made and planted last season. The situation is good, for it is upon a gentle slope quite at the extremity of the dressed grounds, beyond some dispersed groups of Rhododendrons, and is well screened from the south-western gales—so trying and severe in this part of Sussex—by a thick irregular belt of trees and shrubs. The design is of a circular form, consisting of a double series of curved oblong and circular beds surrounding a central group of iron pillars, with pendant chains for climbing Roses.



Eridge Castle.

The glass houses, pits, and offices are arranged in a spacious quadrangle, enclosed by walls adjoining the kitchen garden. The stove, a span-roofed structure, having a raised bed along its centre with a water-tank beneath, and wide shelves along its sides, contained an interesting and very healthy collection of the plants generally found in such houses. Among them were some well-flowered *Eucharis*, the curious *Drosera dichotoma*, the charming *Adiantum farleyense*, one of the finest and most distinct Ferns of modern introduction, and a rich variety of *Caladiums*, *Dracenas*, and *Lycopods*. Planted in the centre bed of this house, and trained along wires under the roof, were four climbers which were worthy of note as being in Mr. Rust's estimation the best four stove climbers; they were *Bougainvillea spectabilis*, *Stephanotis floribunda*, *Passiflora princeps* laden with brilliant racemes of its bright pink flowers, and the magnificent free-flowering *Allamanda Hendersoni*.

Among the Vines were good bunches of Lady Downe's, well coloured and with fine berries. The White Lady Downe's was not so satisfactory, shanking being visible in the whole of its bunches; that this is peculiar to it was evident from the fact that the fruit of several other varieties of Grapes growing in the same house was quite free of this evil. I noticed excel-

lent fruit of Mrs. Pince's Muscat, and that distinct and valuable late Grape Black Alicante. Pines, both fruiting and succession, were in excellent condition. Pot-culture is followed, and the favourite kinds are Smooth-leaved Cayenne and Ripley Queen. Melons are grown extensively in pits, and although many kinds are cultivated, preference is given to Bromham Hall. A promising scarlet-fleshed kind, raised by Mr. Rust, and named "The Claimant," bore some very large fruit, one that I saw weighed 11½ lbs.

There were other pits, containing Orchids and a variety of useful plants for decorative purposes.

A pole standing in the quadrangle bears an appropriate vane in the form of a gilt spade, and having at its foot a useful set of meteorological instruments, comprising various thermometers, a barometer, a hygrometer, and a rain-gauge. At the garden office I saw a barometer having the bottom of the tube in an open cup of mercury; this was a contrivance of Mr. Rust's, and is an accurate and reliable instrument.

In the kitchen garden there are three acres enclosed by walls, and about as much outside. All kinds of wall fruit were scarce excepting Pears, which were very abundant, most of the trees bearing an unusually fine crop, particularly Marie Louise, Winter Nelis, Ne Plus Meuris, and Vicar of Winkfield. Point-

ing to a small tree of Zéphirin Grégoire, Mr. Rust said he considered it to possess the finest flavour of any Pear known to him. Its medium-sized roundish fruit is in season during November and December, and is then very highly flavoured, rich, and juicy. The crops of vegetables were apparently abundant and good. Most of the forward Potatoes were housed; Royal Ashleaf is much liked here, so is Paterson's Victoria. Too much cannot be said in favour of this excellent Potato; coming into use early in summer, it retains its high qualities in full perfection throughout the season, and I know by actual experience that when other so-called late-keeping kinds are comparatively valueless late in spring, Victoria continues good.

Fruit plantations are gradually being established outside the walls, and due attention has been given to affording the necessary shelter by planting a belt of tall-growing trees outside. An orchard of flourishing young fruit trees was a curiosity, from the fact that during the life of one man it has been successively a corn field, a Larch plantation, and is now, as I saw it, an orchard just coming into bearing. That the Larches were not mere poles when cut is evident from their trunks being used for "sleepers" in the construction of a railway near at hand.

Not far from the village entrance to the park, among a grove of Pines and Larches of an extraordinary height, are the famous Eridge Rocks. These mighty masses of sandstone are wonderful, for they stand there in dignity with their wave-worn sides bearing sure token of the work of denudation that must have occurred many thousands of years ago. The form and aspect of the rocks, though varied, is always picturesque; at some parts a huge mass may be seen projecting from the summit in the form of a canopy, at others the perpendicular sides are beautifully covered with fretwork, while the outline is sometimes angular, sometimes describing a wide-sweeping semicircle, but almost always springs perpendicularly from the walk that winds around the base. Altogether they form one of the most singular and interesting features of the Wealden formation.—EDWARD LUCKHURST.

THE PURPLE-LEAVED BIRCH.

On the 5th of last June, whilst going through the horticultural exhibition at Orleans as one of the party of judges, the attention of myself and of my companions was drawn to a number of shrubs consisting of forty plants all of one species, which were almost hidden in the recess of a somewhat dark-some corner. It required but a moment's contemplation to enable us to grasp the full importance of the remarkable plant, which was, without doubt, the chief object of interest in the exhibition. It was a very beautiful variety of the common white Birch (*Betula alba*), but the leaves were completely purple or purple-black, like those specimens of the Beech so often seen in our parks. Here was, indeed, a real discovery, and a golden medal was with one accord awarded to it.

The purple Birch, which I will for the present call *Betula vulgaris purpurea*, has been obtained by chance by an old hand of the firm of Transon Brothers, named Dubois, from a sowing of the ordinary Birch. He very soon observed the unaccustomed appearance of the plant, and after having raised it he took grafts therefrom, and placed them on young stocks of the common variety, and afterwards put them in pots. At the present time he is said to have a stock of altogether more than sixty plants of very fair strength, and ranging from one to two years of age. We have counted forty at the exhibition, which varied from 2½ inches to 5 feet in height or even more. There can be little doubt but that the fortunate discoverer possesses in them a small fortune. Everything goes to strengthen the belief that the inflorescence of the purple Birch presents no floral character by which it can be distinguished from the variety which is so common in our woods. Moreover, according to the opinion of modern botanists, central Europe has but one species (*B. alba*, *L. B.*; *a. vulgaris*, *Spach*), seeing that it is now the general idea to regard the *B. pubescens* of Ehrhart as merely a simple variety. Likewise M. Regel, in his monograph of the *Betulaceæ*, and the *Prodromus*, joined to *B. alba* as sub-species those forms which all botanists until this time held to be simply specific. It is thus that *B. verrucosa*, *Ehr.* (Europe and Asia); *B. populifolia*, *Wild.* (North America); *B. mandschurica*, *Rgt.*; *B. latifolia*, *Tausch.* (Asia); *B. occidentalis*, *Hooker*, and *B. papyrifera*, *Mich.* (North America); *B. pubescens*, *Ehr.* (Europe, Asia, America); *B. tortuosa*, *Ledeb.* (Russia); *B. excelsa*, are only in the eyes of M. Regel forms of *B. alba*. We are unable to

agree with this view, in spite of the authority of this learned botanist, whom an over-synthetic mind has in this case induced to combine forms entirely different in growth, apparent character, habitat, &c. This insinuation cannot be made against us if we attribute the purple Birch to the ordinary Birch from which it is most certainly sprung.

It will be a great acquisition for our parks, and may be most advantageously associated with the purple Beeches, the habit of which is quite different. It succeeds in the poorest soils, at the same time preserving all the strength and rural beauty of the original type. In fact, for us the purple Birch is the genuine victory of 1872 as regards out-of-door ornamental trees.—ED. ANDRÉ (*in L'Illustration Horticole*).

THE NEW FLOWER MARKET, COVENT GARDEN.

ONE of the most pleasing pieces of street architecture that has of late been erected is the front to the new flower market, Covent Garden. There is in it nothing particularly striking in the way of originality of design, but there is an absence of that affected quaintness which finds such apt interpretation in the hands of some of the violent Gothic men of the present time. To say that the great merit attaching to the main front is the boldness of its lines is to indicate its exception to the prevailing fashion of the day, which is either to destroy all repose and create confusion by overloaded rococo work, or to disgust by the absurd and idiotic employment of the worst features of the worst period of mediæval architecture, wrought out at the hands of probably the worst exponents of the style that the age has seen.

The new flower market runs east and west adjoining Tavistock Street, and the main entrance is in Wellington Street, Strand. The eastern elevation is divided into three bays, by bold and well-proportioned openings, with semicircular arches. The archivolts are of red terra-cotta—the outer face entirely so, the inner face with the voussours alternated by stone. Each arch has a projecting keystone, the centre one ornamented by a crown and the initial B; above these arches is the cornice—the bed-mould and medallion trusses of red terra-cotta, the corona of stone. In front of each truss is a carved Acanthus leaf, and between each a sunk square panel; the elevation is terminated by a balustrade of stone, and, strange to relate, the balusters are of good profile. The spandrels of the arches and the piers are faced with white bricks, and in front of the building there is an iron railing of good design. The ironwork inside is especially worthy of notice for its excellent detail, and too much praise cannot be bestowed upon the structure as a whole, which is characterised by fine and bold proportion, and carefully thought-out detail, honest and good construction, and is one that is in every respect creditable to the architect, whom we believe to be Mr. R. Gers, of the firm of Messrs. Cubitt, by which firm the work has been carried out.—W. W.—(*Building News*.)

THE ROCKERY.

(Continued from page 205.)

ASSUMING, therefore, that whatever is necessary—a pile of irregular stonework or a heap of earth—has been prepared, we must next consider what class of plants will be the most suitable to clothe it with. Tastes differ widely; some persons, anxious to cover the rockwork as quickly as possible, do not object to only a small number of plants being employed, while others like to see the whole as interesting as possible, and therefore wish to avoid all rampant coarse-growing subjects, their object being to have a collection that will bear close inspection, and in which each plant will deserve examination—in short, they desire to have a rockery which shall require and deserve a careful survey, and which will elicit from whoever may inspect it a compliment as to its highly interesting and instructive character. The two views of the matter just stated have each their advocates. Seen at a distance, I am not sure but the first-described mode is the better, as very few plants, or rather species of plants, serve to please the eye at a distance, or where the object is so placed as to render it likely to be hurriedly passed by; but where the rockwork is so situated as to invite close inspection, let the planting be so managed as to present the greatest variety that can be secured of plants having a neat appearance at all times, especially such as are of humble growth. The many interesting plants now in our herbaceous lists allow of this being done without much trouble, and a little care in the choice of sites suitable to each will

be amply repaid by their success. Some of the Sedums and Sempervivums thrive best on the sunny side, and require but little moisture, while the Primulas, certain Saxifrages, Gnaphaliums, Gentians, and others like a little shade during the summer and a greater amount of moisture than the more succulent species. A few shrubs may be added, but not many, unless, as already remarked, the speedy covering of the whole is wanted; but even where only dwarf plants form the bulk of those planted, I would have one or two spreading shrubs as well, say *Cotoneaster microphylla*, or, what is still better, *Juniperus repens*; a tree Box or two might also be admissible. The intending planter will best choose for himself from amongst the following plants, to nearly all of which I have added a few remarks.

HERBACEOUS AND ALPINE PLANTS.

Achillea tomentosa.—A pretty, white-leaved, dwarf-growing plant.

Achillea umbellata.—Umbels of bright yellow flowers; foliage also pretty.

Ajuga reptans rubra.—A dark-leaved plant, makes not a bad edging for beds.

Ajuga reptans variegata.—A white-leaved plant of low growth.

Alyssum saxatile.—A dwarf variety of this is very useful in many ways, and no plant presents a more golden appearance when in flower.

Alyssum saxatile variegata.—A variety with silver-edged foliage, not so good a flower as the preceding.

Androsace lanuginosa.—Dwarf and pretty.

Aquilegia.—A good dwarf specimen of this genus is useful.

Arabis alba variegata.—This is one of the most useful edging plants I have, especially for winter; in rockwork it is also of great service.

Arabis lucida variegata.—I have not been able to make much of this. I imagine it succeeds best in peat, or soil approaching that character.

Armeria vulgaris (the common Thrift) is well deserving of a place, and so are some others, of which I have not the botanical name; but they are taller in flower-stems, while the plant has nearly the same low compact habit of growth.

Aubrietia purpurea.—Good.

Aubrietia purpurea variegata.—Very pretty, and well deserving extensive cultivation.

Aubrietia Campbellii.—Darker-coloured flower than *purpurea*, which it resembles.

Bambusa Fortunei.—Very pretty, but of doubtful hardiness. It is deserving of a trial.

Caltha palustris flore pleno.—Planted on the shady and moist side of a mound this looks well when in flower.

Campanula.—This extensive family presents both tall and dwarf members, both good. Among the latter, *C. pumila* and *pumila alba*, which differ but little from the *Carpatia* section. All are of easy growth. *C. pulla*, *C. garganica*, and *C. turbinata* are also dwarf, and all are good. There are besides several good tall specimens, but they are better adapted for the herbaceous border than the rockery.

Centaurea candidissima and *C. gymnocarpa*, though not usually regarded as hardy, nevertheless often withstand the winter in favourable localities, and may be tried.

Cineraria maritima and *C. acanthifolia* may also be tried. *C. maritima* is all but hardy, and looks well in every position.

Cheiranthus ochroleucus.—A neat, dwarf-growing plant, so is *C. Marshallii*; and the ordinary Wallflower is also good.

Cerastium tomentosum deserves a place, but do not let it overrun less robust plants.

Convallaria.—The Lily of the Valley is better in a bed by itself, but a plant of Solomon's Seal (*Convallaria Polygonatum*), is good, overlapping smaller plants with its graceful Fern-like pendants.

Coronilla gibraltaria.—A bright yellow flower, but liable to overgrow its neighbour.

Cyclamen europæum.—Exceedingly pretty where it does well, but it is not in every place it will do so. It is a plant well worth trying.

Dactylis glomerata variegata.—This pretty variegated Grass prefers a moist to a dry situation.

Dianthus petreus and *fimbriatus*, both distinct from the common Pink and Sweet William, are worthy a place. The common white Pink is, perhaps, the most useful of all.

Doronicum caucasicum.—Pretty, rather tall.

Dryas octopetala.—Very neat, but said to be eclipsed by *D. Drummondii* and *integrifolia*.

Epimedium alpinum.—Dwarf.

Eranthis hyemalis.—The early-blooming Winter Aconite, one of the most charming early blooming plants we have. Too much cannot be said in its praise.

Erinus alpinus.—A pretty dwarf-growing plant.

Erythronium dens-canis (Dog's-Tooth Violet).—A plant pretty alike in foliage and in flower. There are different varieties of it all more or less good.

Festuca glauca.—A grey-looking Grass, well worthy of cultivation.

Funkia Sieboldii variegata.—A very pretty-leaved plant often met with in greenhouses.

Gentiana acaulis and *caucasica* are both good, as are some others, but I have only grown the above; but all neat plants of this genus may be regarded as eligible.

Gypsophila gracilis.—A pretty white-flowering plant.

Helleborus niger vernalis (The Christmas Rose).—This plant is indispensable for rockwork. It likes the shady side and moisture rather than dryness. There are other species also good. Even *H. fatidus* may be admitted for its Palm-like foliage. It is, however, taller than most of the plants enumerated.

Hepaticas.—The white, blue, and crimson are all deserving of culture. Their merits are too well known to require further comment.

Iberis corifolia, *I. gibraltaria*, and *I. sempervirens* are all dwarf, and deserving of attention; the first in particular is very showy.—J. ROBSON.

(To be continued.)

NOTES AND GLEANINGS.

THE largest quantity of the different varieties of GOLDEN YEWs we have ever seen are at the Great Berkhamsted Nurseries of Messrs. Lane & Son. There are acres of them in single pieces, and the effect produced by this mass of gold set, as it were, in a framework of green Conifers is very rich indeed, and furnishes a model for planters to follow who are desirous of introducing rich and harmonious colouring into their garden scenery. It has often struck us that there is a great want of taste in the way ornamental plantations and shrubberies are usually planted. Although the planter, like the artist, has every shade and variety of colour with which to work, how rarely does he take advantage of the opportunities at his disposal! Could planters but exercise the same skill, and exhibit the same taste that flower gardeners have done during these later years, and paint with trees as they have done with flowers, only less gaudily, how much more cheerful and picturesque our plantations and shrubberies would appear.

— ONE of the most effectual means for keeping off the TURNIP FLY is to strew spent hops between the rows of Turnips. Whether the effect is of a narcotic character or not we do not pretend to say, but it is a most effectual check to the ravages of this troublesome pest, and has been used with great success this season by the market gardeners about Chiswick, Turnham Green, and Ealing.

— THERE is now in full bloom in the open air at the Berkhamsted Nurseries a luxuriant plant of *CASTANEA CHRYSOPHYLLA*, or Golden-leaved Chestnut. It is perfectly hardy, and forms a handsome large shrub.

— AT the sitting of the French Academy of Sciences on September 9th, a number of communications on the subject of the ravages of the *PHYLOXERA VASTATRIX* in the vineyards of France were read by M. Dumas, and referred to the *Phylloxera* Committee of the Academy. It appears that the disease is making fearfully rapid advances in Provence, threatening the speedy entire destruction of the crop. In the department of Vaucluse it is also rapidly increasing; while in that of l'Hérault it is rather diminishing. All the correspondents agreed that when once a plant is attacked cure is hopeless, and that it is almost impossible to prevent the parasite spreading to neighbouring plants by any other means than complete submersion under water, though the application to the roots of a soil composed of sand, manure, and some insecticide, will delay it for some years. There is no doubt that the wingless insect migrates above ground from the diseased to the healthy plant, and is carried in great quantities by the wind. M. d'Armand, of Marseilles, demanded that a prize of 500,000 francs, or, if necessary, 1,000,000 francs, be offered by the State to anyone who shall discover a means of arresting the disease. The pest has made great advances also in Portugal, especially in the neighbourhood of Porto, Villa Réal, Douro, and Santarem; and a Royal Commission has been appointed to investigate fully the causes of a disease which threatens the destruction of one of the most important branches of national wealth, and the best means of curing it.—(Nature.)

WORK FOR THE WEEK.

KITCHEN GARDEN.

THE continued fine weather has been very favourable to all operations in the kitchen garden, and also to the crops.

Except the usual course of salading, there is very little sowing to be done for some time; and as soon as the late *Cauliflower* and the spring *Lettuce* plants are pricked or planted out little more planting-out will be needed for some time, except among the market gardeners, who will still plant out a large breadth of plants for late Coleworts. The long crops of *Onions* have been safely harvested, and look as if they would keep well. If, therefore, a few *Endive* plants are kept blanched, and the *Celery* rows not allowed to grow too long without moulding-up, attention may be directed to forwarding work which might otherwise have to be done in spring. Thin growing crops before they become weakly and drawn through standing too closely together; stir the surface of the soil deeply amongst them to admit air to the roots, and keep down weeds.

FRUIT GARDEN.

Frequently look over fruit remaining out of doors, and gather it as it becomes fit, as if allowed to become over-ripe it will be liable to be blown down and bruised by high winds which generally occur at this season. Also examine those stored in the fruit room frequently, as occasionally a few decaying fruit will be found for some weeks after housing, and these should be removed as soon as they are perceived. Keep the fruit room cool and airy, in order to allow of the escape of the moisture given off by the fruit, which at first is considerable for a few weeks. Examine occasionally Plums, or any other fruit protected by covering, to see that they are not spoiling. Where it is intended to make any fresh plantation of fruit trees this season, the ground should be prepared at the earliest convenience, and any fresh soil to be used for planting should be thoroughly exposed to the action of the weather, so as to have it in a mellow state when wanted for use. If not already done clean and dress Strawberry plantations, clearing away all useless runners and giving a good dressing of manure where necessary, but be careful to select that which is thoroughly decayed, and which can be covered without the necessity of digging deeply or injuring the roots.

FLOWER GARDEN.

Unless alterations are in hand the principal work in this department will now be confined to mowing and cleaning, and if neatness is to be maintained this will require constant attention. See also to getting gravel walks thoroughly cleared of weeds and moss, and roll them frequently when wet to keep the surface level and smooth. The weather has lately been most auspicious for the flower garden; the masses of colour are now most brilliant, and save for the falling of the leaves we might deceive ourselves into the impression that summer is at its zenith. In a few days more, however, we may anticipate a "nipping frost," which will lay prostrate the glories of our gardens. As there are many plants of which it is desirable to preserve some of the old stock for flowering next year, it will be necessary to place them now in well-cleaned pots, and set them in close pits till somewhat established. There is this advantage in old plants, that they cover more space, flower earlier and more abundantly than young ones. Finish planting Pinks, and do not delay the planting of bulbs. Now is the time to plant out young hardy Conifers; they will become established before winter.

GREENHOUSE AND CONSERVATORY.

Be prepared with specimen plants in flower to supply the places of such as may be going out of bloom. If early *Camellias* are wanted let some of the strongest be placed in a rather close house to forward them, giving them a regular supply of manure water. Some of the earliest *Epacris* might also soon be placed in a close part of the greenhouse, where they will likewise prove useful for early decoration, *Daphnes* also and many other plants, provided their flower-buds are prominent. Aim at keeping the atmosphere of plant houses rather dry, using just enough of fire heat on damp, cold nights to afford an opportunity of giving sufficient air to keep the atmosphere in motion, so as to prevent damp being injurious. In cases where there are many stove plants in the conservatory it will be necessary, in the event of the weather becoming cold and wet, to use a little fire heat, but be as sparing of this as circumstances will allow, particularly if there are other plants in the house likely to be injured by being kept too warm. In this case it will be advisable to dispense with stove plants, even at the expense of rendering the house somewhat bare of flowers, rather than to keep them here and run the risk of injuring other plants on their account. Be careful not to overwater plants brought from the stove, and also to use water at a temperature of 70° or 80° for these, as

watering plants that have just been brought from a warm house with cold water injures the young and tender roots, shortens the duration of the blossoms, and often destroys them. Use weak manure water for *Salvia splendens* and *Gesneræflora*, so as to preserve the plants in a vigorous state and blooming as long as possible. Give air freely on fine days, and thin out twiners on the roof wherever this can be done with propriety, so as to expose the plants to all the light possible. Give attention to the securing a plentiful succession of plants for maintaining the gaiety of the house during winter.

STOVE.

Twiners on the roofs of stoves should now be more than ever kept within bounds, cutting back all shoots that have done flowering, and tying the others so as to obstruct the light as little as possible. Place specimens ripening their wood in the coolest part of the house, and water them sparingly at the root. *Achimenes*, *Gloxinias*, and *Gesneras* that are properly ripened-off may be stored away in any dry place where they will be secure from frost, but take care to place them where they will be free from damp, and not exposed to a lower temperature than about 45° or 50°. Many valuable plants of this kind have been lost through storing them in dry sheds. Hardwooded shrubs, such as *Ixoras*, that have not made wood after flowering, should be encouraged with a warm moist temperature, syringing them lightly overhead, and shutting up the house early in the afternoon. Let any growing plants that require more pot room be shifted as soon as convenient, in order to have them well rooted into the fresh soil before winter.

PITS AND FRAMES.

Pay careful attention to young stock, and recollect that sturdy well-rooted plants are much easier to winter than large plants with long-jointed soft wood. Late-rooted cuttings may still be potted-off, but unless they are very close together in the cutting pots I prefer wintering them in these to shifting, for they occupy much less space in the cutting pots, and having more space for their roots, they are frequently more healthy, and require less attention in winter than those which are potted singly. Square pans 12 inches wide and 5 inches deep are very suitable for wintering cuttings of *Verbenas*, *Lobelias*, and other plants which can be kept in a small state. One of these will hold twenty good plants, and with care to prevent their being injured by damp, they will winter quite as well treated in this way as if potted singly in 4-inch pots, and a vast quantity may be stored in a small space. Where plants of this kind have to be kept in cold frames or pits, they should be potted singly, as they would be very liable to damp-off, notwithstanding every care that might be taken of them if placed thickly together in pans, and put where it may be impossible to give air for weeks together. I must, however, protest against the system of wintering bedding stock in such unsuitable places. This practice is generally adopted from some mistaken notion of economy; but if a fair calculation of the time required to attend to plants wintered in this way could be made, and all the losses, &c., taken into account, it would be found to greatly overbalance the trifling cost of putting up a proper heating apparatus, and furnishing a few bushels of coke or coal annually.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

EARTHED-UP Celery for succession. In some seasons three weeks have been sufficient to effect the blanching of it, but, as a rule, it is not safe to reckon on less than four. We have no faith in the bit-by-bit earthing-up of *Celery*, except for late crops, as in the case of early ones it only encourages the tendency to run into flower-stems.

Cauliflowers.—Many of our plants turned blind, forming only a bunch of whorled leaves in the centre instead of a head. We do not think it was due to the fact of their coming from unripened seed, because all our crops, good and bad, have sprung from seed out of the same packet. Of all *Cauliflowers* we have found Veitch's Late White the best, obtaining huge heads of splendid quality from it up to the new year. Even for this season it is better than the earlier sorts, which are apt to fall away and become loose in texture during September and October.

Cleared-off our Onion crop and laid them out to dry, to be in readiness for stringing. The ground which they had occupied was dressed with rubbish, half-trenched down, when dry rolled on the surface, and shortly afterwards planted with

Cabbages reared as before stated. Among *Cabbages* for succession we like Veitch's, Atkins' Matchless, and Little Pixie, a sweet early kind. They should be planted in runs 15 inches apart, and in rows removed from each other some 10 or 12 inches. In every one of the three crops which each yields, the produce is plentiful, particularly that of the first mentioned. We plant larger sorts 2 feet apart in the rows, and allow 15 inches between plant and plant. These produce large full heads for the kitchen, but the smaller kinds are decidedly most useful for the parlour and cottage-gardens of limited extent.

This Vanack or Atkins' Matchless, improved by Messrs. Veitch, can be grown well a foot apart, and from it vast quantities of *Cabbages* and *Sprouts* can be cut in the season. We plant *Coleworts* less than a foot apart. From them we obtain nice little heads from this time onwards, which some people like better than offsets from *Cabbages*. For a small garden we know nothing more profitable than the small compact Matchless, as after the first *Cabbage* is cut it will soon produce three or four more, and go on producing more and more small young *Cabbages* through the winter and spring. If such a close plantation received lots of house sewage, soapuds, &c., during the summer and early autumn, there is no calculating the amount of produce they will yield. Now is the time for planting *Cabbages* on ground previously occupied by *Onions*; but it should not, if already well prepared, be again manured, as this will be apt to make the plants grow too luxuriantly and be nipped with frost. Several times when our *Cabbage* plants became rather strong, we have gone along the rows, raised the plants a little with a fork just so as to snap the stronger roots, and then trodden the ground round the plants again, afterwards roughening the surface to prevent the frost acting too freely on it. We have thus saved fine rows of *Cabbages* when other luxuriant rows left alone suffered from the severity of the winter. It is better to apply some manure as top-dressing in spring when plentiful crops are required. If, however, plants are expected to bear heavily in the two ensuing springs, a lot of rich material from the rubbish heap should be dug down in layers from 15 to 18 inches from the surface. Ground thus heavily cropped we generally renew again by taking the *Cabbage* stumps away and ridging and bedding for *Peas* and *Celery*.

FRUIT DEPARTMENT.

Gathered the ripest fruit carefully, placing the *Peaches* on fine paper, with wadding or fine dried short grass beneath it. A clean soft hand is the best of all for gathering. A practised gatherer knows almost without touching the fruit whether it is ready. Backward though the season has been in certain respects, some fruits are earlier than usual. For instance, we have had some fine *Marie Louise Pears*, though generally they are not ripe until a fortnight later.

ORNAMENTAL DEPARTMENT.

We have been obliged against our wishes to water the most of our flower-beds heavily, and especially all edgings. On the 20th we picked the flower-beds over and watered them moderately. By so doing the roots were encouraged to support the dense masses of bloom which would not then have been hurt by any shower that might have come soon afterwards. Had we allowed the soil around the roots to remain dry, a shower of rain arriving before these were able to exert their influence, would have washed-off bushels of flowers. It is interesting, after a shower, to observe the difference between the appearance of plants which have been treated after the former fashion, and those abandoned to the latter condition. Peeks of *Calceolaria* blooms would often be saved on the plants if the roots were moistened before heavy rains. A dull day before rain is expected is often the best time to apply pure water, or sewage and manure water.

Got on with cuttings, and will now have a busy time in arranging and fresh supplying corridors, conservatory, &c., and repotting *Cinerarias*, *Primulas*, *Pelargoniums*, late *Balsams*, and dividing and potting *Ferns*, and showy-foliaged plants. The *Coleus* in huge masses comes in well in warm corridors, as the more direct light they have the richer and better are the colours. The least shade injures their brilliancy. The best thing of all for compost is turf, bristling with hard needle-like grass, cut some 2 or 3 inches deep. This will be found so tough and full of fibres, that it requires an effort to pull it asunder. The simplest mode of bringing such turf into a useful compost for potting, is to build it neatly into stacks from 3 feet in width, and finishing it with a span-roof, by drawing the turf to a point. Run open drain-tiles every foot

or so through the stack, or some rough branches of wood, so that the air may permeate and sweeten the mass, and yet the rains be excluded. In less than a twelvemonth such sods will have lost all their vitality and be as sweet as sweet can be. When we cannot wait for the natural sweetening of such turf, a good plan is to light a fire with any rubbish and then place the sods around it to kill and char the grass. Such sods freely exposed for a fortnight will make good potting compost.—R. F.

TRADE CATALOGUES RECEIVED.

W. Paul, Waltham Cross, London, N.—*Rose Catalogue*, 1872–1873.

E. G. Henderson & Son, Wellington Road, St. John's Wood, London, N.W.—*Catalogue of Bulbs and Flower Roots*.

J. Dickson & Sons, Newton Nurseries, and 102 and 103, Eastgate Street, Chester.—*Select Roses—Catalogue of Bulbous Flower Roots—List of Grape Vines—List of Strawberries*.

T. S. Ware, Hale Farm Nurseries, Tottenham.—*Catalogue of Spring Flowers, Hardy Bulbs, &c.*

D. Gold McKay, Market Hill, Sudbury, Suffolk.—*Catalogue of Dutch Flower Roots, Roses, Trees, Shrubs, &c.*

Harrison & Sons, Seed Growers, Merchants, and Nurserymen, Market Place, Leicester.—*Dutch and other Bulbs*.

George Such, South Amboy, New Jersey, America.—*Stove and Greenhouse Plants*.

TO CORRESPONDENTS.

* * We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

WHAT CONSTITUTES A BICOLOR GERANIUM? (J. D.).—The other names by which *Bicolor Pelargoniums* are known sufficiently indicate the reply to this—viz., "Gold and Bronze," therefore they must have a yellow edge.—D.

SEEDLING SCARLET GERANIUM (C. Hart).—The truss is very large and the colour good, but no opinion can be formed of its worth for gardening purposes without seeing an entire plant. Send one to the Floral Committee of the Royal Horticultural Society.

ROSES ON TRELLIS (H. F.).—The varieties you mention will require no winter protection at West Brompton.

ROSE LEAVES CUT IN CIRCLES (Centurion).—The cuts are made by the leaf-cutter bee. We know of no remedy but catching the assailants. There are notes on the insect in our twenty-first volume, pages 356, 357.

PASSAGE OF HEAT, &c. (J. H.).—We cannot insert more on the subject.

ELDER CUTTINGS (Sambucus).—We never knew rabbits touch the Elder, nor do we think they would as long as any other plant could be got at. "The Fern Manual" includes the greenhouse species and their culture.

FRUIT TREES FOR WEST WALL (E. W. S.).—*Elrue Nectarine*. *Hemskirk*, *Shipley*, and *Moorpark Apricots*. *Bourré Bosc*, *Passe Colmar*, and *Winter Nelis Pears*. *Early Mirabelle*, *Drapp d'Or*, *Green Gage*, *Jefferson*, *Coe's Golden Drop*, and *Late Rivers Plums*.

CLIMBERS TO COVER A HOUSE IN YORKSHIRE (R. G.).—We fear that a smooth-dressed stone wall will not present inequalities enough to enable Ivy to cling when its growth projects outwards much; but it may cling for a few years, and then wires might be placed before it as needed, and if led along beneath the foliage would not be seen. With the exception of some kinds of *Ampelopsis* and *Bignonia capreolata* we do not know of anything that, without artificial support, clings sufficiently to a smooth wall. Presuming, therefore, that you give the preference to Ivy, there are several varieties of this all good. The Irish is the quickest grower, but not the best climber. *Hedera Ragnieriana* is very good, so are the Heart-leaved and *H. palmata*. The Silver and Gold-edged look pretty, but are of slow growth; a blotch-leaved variety grows faster. Amongst other evergreen climbers, the *Pyraecanthas* and others of the *Crataegus* family are useful, and the berries of several are highly ornamental. *Cotoneaster microphylla* may be tried, and we have seen *C. Simmondsii* look exceedingly well in autumn and winter when loaded with its rich orange-coloured berries; it is half-evergreen. Perhaps the fastest-growing of all evergreen climbers is the *Evergreen Honeysuckle*, while amongst those of half-evergreen habit may be mentioned *Periploca græca*, *Jasminum revolutum*, and *Roses* of endless variety. Some deciduous climbers may be added for their ornamental foliage or showing flower. Of the latter class *Jasminum nudiflorum* produces its handsome yellow flowers at Christmas, *Forsythia viridissima* early in spring, *Wistaria sinensis* a little later, and the *Clematis* family during the summer. The departing foliage of the *Virginian Creeper* gives a rich tint to the scenery in autumn. The noble foliage of the *Aristolochia* ought not to be forgotten with its singularly-formed flowers concealed beneath a mass of foliage. We cannot recommend *Ceanothus*, *Passifloras*, and some other plants for Yorkshire. We give the preference to Ivy and *Roses*, which we would plant in greater abundance than anything else, adding *Jasminum nudiflorum* if appearance in midwinter is important.

TWENTY CHOICE HARDY HERBACEOUS PLANTS (F. J.).—As you do not mention the height nor the time at which you want the plants to flower, we presume you would like both early and late-flowering, dwarf as well as tall species. As the number is so limited we must exclude many of unquestionable beauty and utility. *Helleborus niger* (Christmas Rose), *Hepaticas*, *Myosotis dissitiflora* (Forget-me-not), *Viola cornuta*, and *Alyssum saxatile* are dwarf and early-flowering. They may be followed by taller plants, as *Delytra spectabilis*, *Campanula glomerata purpurea*, *Pinks*, double white *Rocket*, and *Spirea japonica* if the situation is favourable. *Spirea Filipendula plena*, *Statice latifolia*, *Delphinium formosum*, a double white *Pyrethrum*, a good variety of *Pentstemon gentianoides*, *Nepeta violacea*, which will grow almost anywhere, *Sedum Fabaria*, also an excellent plant for a dry place, one or two *Phloxes*, say one good white and one deep rose colour, and *Aconitum virginicum*. The last-named is quite 4 feet high. We have named just twenty plants, and yet none of the *Primroses*, Sweet *Williams*, *Aubrietias*, *Iberis*, *Gentianella*, *Crothra*, *Veronica*, *Saxifraga*, or *Prunellas* are included, although several members of each of these genera are highly ornamental. *Verbena venosa* flowers as well as an herbaceous plant, and nothing is more lovely than the common white *Lily*. Double *Catchfly*, scarlet *Lychnis*, *Antirrhinum*, *Silene Schaffa*, *Saponaria ceymoides*, several kinds of *Iris* and *Dianthus*, as well as a host of *Saxifragas*.

GERANIUMS (G. G.).—Write to Mr. Jackson and tell him, if you do not hear from him satisfactorily, you will not only sue him in the County Court, but write to the inspector of police. It will be fair to give him such a notice, as there may have been a miscarriage of the parcel.

GRAPES WITH BROWN SPOTS (R. R. E.).—The Muscat berries you enclosed were very slightly rusted, caused, probably, by sudden exposure to a cold current of air. From the variable size of the berries we suspect that either the bunches are not sufficiently thinned, or that mulching over the roots would be of benefit.

SEEDLING VERBENA (W. D. E.).—The blooms were withered. Send a plant to the Floral Committee of the Royal Horticultural Society, South Kensington. The Committee meets next Wednesday.

RENEWING A VINE BORDER (A. Z.).—We renewed a Vine border a few years ago in exactly the same way as you intend to do yours. We first got the following compost ready. To three cartloads of turfy loam added 1 cwt. of crushed bones, one bushel of charcoal, and six barrowloads of mortar rubbish. This was well mixed together by turning it over twice. The inside border was the same width as that outside. The Vines planted inside, and the front wall on arches. Our first effort was to dig a trench 3 feet wide at the furthest extremity of the border; we dug quite to the bottom, cutting away all roots. We then with forks cleared away all the old compost, working from the trench to the front wall of vinery, and saving all the roots we could. We then saw that the drainage was all right, as no Vines will succeed with stagnant water underneath the border. The compost was then wheeled in, but all the roots were kept near the surface. We did this in September with a full crop of fruit and leaves on the Vine, and the Vines were not in the least injured. Our inside Vine border was much wider than yours, but we think you may do it now without injuring the Vines.

INARCHING VINES (G. C.).—The proper time to inarch Vines is in summer when they are in full growth. Place the growing shoots close together, cut a slice of each to about half their diameter and about 4 inches in length, place the cut edges together, and see that the two edges fit at least on one side, tie them tightly together with a strip of matting. You must also fasten the shoots together, both above and below the union; these ties are necessary to hold them in their places. When it is necessary to undo the fastening which holds the union, as it will soon be too tight and cut the bark, a fresh fastening must be put on, but tied more loosely. The connection will be complete in about six or seven weeks, but do not remove the fastening until the end of the season. You may leave 7 feet of cane on your young Vine in ground vinery, and let it carry three or four bunches only during the first year.

POTTING BEDDING CALCEOLARIAS AND AGERATUMS (Amateur).—Both may be potted before frost, and will winter quite safely in a greenhouse; give them only enough water to keep them from flagging. We should prefer to put in cuttings of *Calceolarias* in October before the plants are frosted, placing them an inch and half apart in a cold frame. They are vastly superior to old plants or cuttings from them grown in heat. The *Calceolaria* cuttings in frames cannot have too much air when the weather is mild, and when severe a good covering should be put over the lights. Keep them in the dark as long as they are frozen. The old plants of *Ageratum* wintered in the greenhouse will in spring give you cuttings, which strike freely in a hotbed. Stop them when well rooted, and pot them off singly, or transplant into shallow boxes about 3 inches apart, growing them on in the frame, and ultimately hardening them off in a cold frame. They will be good plants by bedding-out time if the cuttings are put in at the beginning of March. Mrs. Pollock Geranium taken up now and potted will be safely wintered in a greenhouse; let the plants have a light well-ventilated position, taking care not to overwater, and keep them free of decayed leaves.

COMPOST FOR SHOW AND FANCY PELARGONIUMS (Idem).—For the Show kinds two parts very fibrous light loam, one part old cow dung or very rotten hotbed manure, half a part leaf soil, and a fourth part charcoal in lumps the size of a pea, and silver sand; the whole well incorporated. For the Fancy kinds add to the above a part of sandy peat. The plants we presume were cut back some time ago to within three or four eyes of the base of the current year's growth; if not, it must be done now, keeping them rather dry until they have broken afresh, and have young shoots about an inch long. Then they should be shaken out of the pots, all the old soil that comes away freely removed from the roots, and be potted in the same size of pot as that in which they were before. Place them near the glass, where they will have abundance of air in mild weather, and have no more water than sufficient to keep them slowly growing. They will not be fit for their blooming pots until February. Had they been cut down earlier they would have needed them in December. Eight-inch pots will be sufficiently large for your plants. Stop them when they have grown 2 inches.

DAHLIAS STORING (Idem).—Take them up after the first frost, cut off the top about 6 inches above the roots, lay them in a shed for a few days to dry, and then bury the roots in dry sand either in a cellar or in boxes of sand. Put these in a cool place, but safe from frost. They should be started in heat in March.

SELECT EXOTIC FERNS (Idem).—We presume you wish for those that do not require a higher temperature than a greenhouse. The following are a dozen—viz., *Adiantum cuneatum*, *Asplenium dimorphum*, *Gleichenia dicarpa*, *G. spelunceæ*, *Lomaria gibba*, *Neottopteris australasica*, *Cheilanthes elegans*,

Platynerium alciocorne, *Pteris scaberula*, *Woodwardia radicans*, *Nephrolepis tuberosa*, and *Davallia tenuifolia*.

CHERRY BUDS DRIED (Jno. Knott).—We do not know in what way you can use the Cherry buds. You had better have a few more sent. The best way to send buds is to pack the shoots in damp moss placed in a cardboard box; wrap the box up in stiff brown paper, and send by post. If the bark does not part freely, immerse them in water for a few hours.

MELONS NOT RIPENING (A Constant Reader).—We should consider the cause of the Melons not ripening to be the cold and wet we have had. Without any heat Melons in a frame in a season like this yield a very uncertain crop. If you had lined the bed and maintained a good heat the fruit would no doubt have ripened if air had been given freely.

LAWN LIABLE TO PARCHING (Herba).—In your case we would take up your lawn at the beginning of November, or at any time in mild winter weather. Remove it in strips of equal width and equal depth, and apply 2 or 3 inches of your rich compost. That will greatly improve the lawn, but it would at first involve extra cutting. In such a case we have little faith in top-dressing or surface-watering. You would see the matter alluded to lately several times in "Doings of the Last Week." The taking-up and relaying will give you a good chance of having your lawn beautifully level. Place hollow stalks of Beans among your Roses, and little pots half filled with dry moss. Clear the earwigs out of these in the mornings.

SPERMANNIA AFRICANA CULTURE (O. W. D.).—It is a fine greenhouse evergreen shrub with white flowers, usually produced in May. Use for it a compost of two parts fibrous loam, one part sandy peat, half a part leaf soil, and a sixth of silver sand, the loam and peat broken up not very finely, and the whole well incorporated. Drain well, and pot rather firmly, with the collar of the plant slightly elevated. Potting is best done in spring. Water freely when growing, but in winter give no more water than will keep the foliage fresh. Any pruning required should be performed after the flowering; or if the plant is not large enough for that, prune in spring before the growth begins. A light airy position is necessary.

DESTROYING MOSS AND WEEDS ON WALKS (A Constant Reader).—We presume you wish to destroy them without the trouble and inconvenience of breaking up the paths. Salt put on thickly will destroy the weeds and moss, and the paths only need to be gone over with a stiff broom a few days after the salt has disappeared. Apply it briskly so as to remove the moss. Another method, and we understand very effectual, is to dissolve 1 lb. of arsenic in three gallons of cold water, boil and keep stirring it, then add seven additional gallons of cold water, and 2 lbs. crushed soda, stir the whole well in the boiler, and apply to the walks as hot as possible with a rose watering-pot in dry weather. If applied in spring few if any weeds will appear during the summer. It should be kept from the grass or Box edging by laying an inclined board merely to throw the hot liquid on to the walk. The quantity named will be sufficient for twenty-five or thirty square yards.

ORNAMENTAL HARDY GRASSES (Idem).—*Agrostis argentea*, *A. nebulosa*, *Anthoxanthum gracile*, *Briza geniculata*, *B. maxima*, *Brizopyrum sicutum*, *Bromus briziformis*, *Eragrostis elegans*, *Hordeum jubatum*, *Lagurus ovatus*, *Pennisetum setosum*, and *Piptatherum Thomasi*. Those are hardy annuals—*Stipa elegantissima*, *S. pennata*, and *Glycerium argenteum*, are perennials—*Eleanor* is a good late Strawberry.

PRICKLY COMFREY (W. H. W.).—It has been very limitedly recommended as a cattle food, but we have no experience of its value, and certainly cannot advise you to grow it instead of corn, &c.

LIQUID MANURE FOR CHRYSANTHEMUMS AND MIGNONETTE (A Subscriber).—Both the *Chrysanthemums* and *Mignonette* in pots would be benefited by the application of liquid manure in the proportions of 1 lb. of guano and a peck of soot to thirty gallons of water. It may be applied twice a week, but only when the plants are in need of water. The manure you name is good.

ECHVEERIAS AND ALTERNANTHERAS (T. S. C.).—*Echeveria secunda glauca* seed may be sown now. The pot or pan should be placed near the glass, kept just moist, and have a night temperature of from 55° to 60°. The "Ech" in *Echeveria* is sounded hard, as if spelt "ek." *Alternantheras* are not sufficiently hardy to remain out-doors with a little protection. They should be taken up and then potted, and wintered in a greenhouse. The *e* in the penultimate is a long *e*. The "Cottage Gardeners' Dictionary" gives the pronunciation and derivation of the names of plants. It may be had by post from our office free by post for 7s. 2d.

PEAS FAILING (H. T.).—We think the Peas fail from the dryness and poorness of your soil. The trenching of gravelly soil is, as a rule, not conducive to the invigorating of plants, as such soils are very poor in subsoil. There is no harm in trenching so long as there is soil. Where it was bad, loosening the second spit and not bringing it to the surface was doing quite right. As you have lined the ground—which will be very beneficial as a deterrent to the insects you say it abounds with, and especially destructive to slugs—we should not apply manure now, but early after February when the ground is in good working order, give a good dressing of farmyard manure, or rather cow dung if you can get it. Your soil only needs plenty of manure—indeed it can hardly have too much. You should husband all the house sewage, &c., employ it in summer highly diluted with water between the rows of Cauliflowers and along the sides of Peas. For late and summer crops of Peas we should prepare the ground as for Celery, but with difference that the ground should be level instead of trenched, as for Celery. Soot and guano will also be good, and should be applied in showery weather.

PRUNING A LAUREL BANK (E. M.).—If it needs much cutting-back, the best time to do so is early in April; but if it requires no more than the trimming off the young growths, this is best done at midsummer, going over them again in August, and removing any irregularities of growth.

TURNIPS FAILING (Idem).—We presume your Turnips fall from "fingers and toes." As you have tried salt and it fails, we know of nothing but applying a dressing of soot so as to make the ground quite black before throwing up the drills. This is also a good manure; but gas lime would probably be best. You may apply it at the rate of twelve bushels per acre, harrowing it well in; or you may still further make sure by applying it at the rate of twenty bushels per acre, which is the maximum quantity.

WOODLICE (J. Garrett).—We never undertake to test and report upon species. If you applied to some of the principal seedsmen who advertise in our columns, they might test the specific, and if found effectual, make arrangements for obtaining for it a sale.

NAMES OF FRUITS (G. S.).—There is little doubt but that the Fig is *Poulette*. (C. D. B.).—We do not know the name of the Apple sent. (X. Y.).—We believe both specimens of Apples to be Warner's King. (S.).—The Pear which is known about York by the name of "Janet" is *Amiré Joannet*, an

old French variety formerly much grown in this country. In the south it ripens very early, but in your northern climate it will now be in season. There was no large Pear sent. The Apple we do not know; it is of little merit, and very dry and woolly. It would be as well in your climate to protect the *Maréchal-Niel* Rose, but you need not cover it entirely if it has become so large. Continue to do as you have done. (P. C.)—The Apple is Kerry Pippin; the Plum Fond's Seedling.

NAMES OF PLANTS (*Thet*).—Why did you send two packages unless with the hope of deceiving us? (*J. Service*).—The Fern is *Cystopteris fragilis*, a native of North America, and requires greenhouse treatment. (*F. Antrobus*).—It is *Aralia Sieboldii*, a native of Japan, introduced by Messrs. Veitch in 1860. Its flowers are somewhat like those of the Ivy. Most of the genus are useful in some way. The Chinese rice paper is made from the pith of *Aralia papyrifera*.

POULTRY, BEE, AND PIGEON CHRONICLE.

FARM POULTRY.

THE ordinary farmer has this advantage over the professional poultry-keeper—his fowls cost him little in the way of food, and almost nothing for care. He usually labours under the disadvantage of not giving his fowls enough care, and managing some things about them with a great disregard for true economy. His fowls, during much of the year at least, live on food that would otherwise have been wasted, or on that the eating of which is a positive advantage to the owner. This makes the eggs and poultry obtained almost a matter of net gain. But because the fowls cost little, furnishes no good reason for keeping those that are useless—and such are kept on many farms. In many cases the stock is never reduced by sale—only by deaths from old age, disease, or accident, and by killing a good share of the young for home use.

We imagine that quite a number of our readers, if they would take the trouble to look at their stock of poultry, would find one to half a dozen cocks which had better be disposed of, on account of old age, quarrelsome disposition, or because they are in every way inferior fowls, simply left over, having accidentally escaped killing when young; and also a goodly number of venerable hens, or those hobbling on frozen feet, &c. To keep such fowls over the winter will cost something, and all this cost will be a loss, for, even if they do not die, such fowls are almost useless. It will be much better to dispose of them now, sending those fit for eating to the market or to the home table, and killing and burying the others.

Many farmers would do well to thus reduce their stock one-half. Better care of the remainder might follow with advantage in many cases. It possibly will be neither advisable nor necessary to build a poultry-house, but some comfortable place could be provided where the fowls may be protected from storms and cold winds by day as well as night. Every consideration of economy will dictate good feeding during winter, so as to prevent the fowls becoming poor. Fowls with insufficient food or exposed to severe storms will not lay well, while it is equally true that very many persons do get a goodly number of eggs during the winter months by giving good food and comfortable quarters to young healthy hens.

We certainly would not advise farmers to purchase large numbers of fancy poultry; but on many farms the old stock has run down by long interbreeding, poor care, and no selection. In such cases a change is certainly desirable, and this would be had by obtaining a good cock, either from a neighbour's yard or from some fancier. For ourselves we should decidedly prefer to have fowls of some established breed, and would not feel satisfied with a stock widely varying in size, colour, and form. But whatever class is kept, some care in selection will be necessary to keep them from degenerating.—(*Western Farmer*.)

WE are requested to remind intending exhibitors at the Ipswich Poultry, Pigeon, Rabbit, and Cat Show, that entries close October 2nd (not on the 1st as announced in our list of coming exhibitions), and that Mr. Hewitt is one of the Judges. The Black Bantam breeders have subscribed for a cup as first prize in that class, which will be given in addition to the Society's usual money prizes.

CRYSTAL PALACE SHOW.—The above annual Exhibition of poultry and Pigeons is to be held at the Crystal Palace on the 19th, 20th, and 21st of November, closing on the Thursday, and so only keeping the Show open for three instead of four days as on former occasions. This arrangement will enable all exhibitors to get their birds home before the Sunday. The schedule is very complete. Nearly all the numerous varieties of poultry and Pigeons have separate classes for young and old birds of both sexes, with three, and in some cases as many as six, prizes to each class. No less than fifty-eight silver cups are offered for competition, ranging in value from three to seven guineas each, and we notice that winners of cups given by the Committee can, upon giving notice, receive money in lieu of the

very-often-useless "cup or piece of plate." Besides these cups, which alone make a total of £252, money prizes to the amount of £800 are offered for competition. The satisfactory way in which the Committee have always carried out all the previous shows, and the very liberal and valuable prizes they now offer, entitles them to every support from exhibitors, and there can be little doubt this will be the largest Show of the year. The schedule consists of 105 classes for poultry, and fifty-five for Pigeons. In most classes the birds are to be shown singly.

MIDDLETON POULTRY SHOW.

THE fourteenth annual Show was held at Middleton on the 18th and 19th of September. The weather on the first day was very unfavourable, but the second day was fortunately fine, and, as is always the case at Middleton, the number of visitors was something extraordinary; the wonder is where they all come from. The arrangements of the Show were very good, the pens were large, and a canvas covering closed them up during the night. Several of the more delicate kinds suffered a good deal from the cold on the first day. There were eighteen pens of Black-breasted and other Red Game chickens, the majority good birds and well grown. Besides the three prize pens, two were highly commended and four commended. In single cockerels were thirteen entries, some of them very good, and others small and weedy, and suffering from the effects of recent dubbing. In Any other variety only the winning pens were up to the mark; as classes they were inferior, and duck feet were very common. In the class for single Game pullets, any breed, there were forty-seven entries, and an unusual quantity of first-class birds; besides the four prize pens eight were highly commended, Miss Aykroyd taking the cup. The three prize pens of *Spanish* were good, Mr. Brierley taking the cup with a very deep-faced cock and good pullet. The *Dorkings* were about an average, the pullets better than the cockerels. Mr. Arkwright took the cup with a good pen. Of the *Brahmas* many were good, but some of them were suffering from too much showing. The pullet class was decidedly the best, and six pens were highly commended in addition to the prize birds. The cup for the best pen of *Brahmas* went to a splendid pen of pullets, the property of Mr. Lingwood. The entries in *Cochins* was not large; the prize pens were very good, both in symmetry and colour. The Golden-pencilled *Hamburg* classes we thought inferior to former years, excepting the winning pens—they were not good. The entries in the Silver-pencilled classes were small—only fourteen pens in the three classes; the prize birds were good, some of the others inferior. The Golden-spangled, although more numerous, were not so good as we expected to see them at this Show. The Silver-spangled were the best of the *Hamburg* classes, and the cup went to a good pen—cockerel and pullets, very hard pressed by the first-prize pen of pullets, and also the Gold-pencilled cockerel and pullet. The Black *Hamburg* classes contained many first-class pens, others a little inferior. The *French Fowls* were very good, Mr. Wood taking the cup and all the first prizes. The *Bantam* classes were well filled, and many good pens were shown, but the cold prevented them showing to advantage. The *Aylesbury Ducks* were very good, both as regards size and bill. The *Rouens* were a large class, and many first-class pens both as regards size and plumage. The cup went to Mr. Wakefield for an excellent pen. The *Geese* and *Turkeys* were, as usual, of great size and weight.

The *Pigeon* classes were all well filled, and some of the best pens we have ever seen exhibited were amongst them. Mr. Fulton took the cup with a magnificent pair of *Trumpeters*, and also the lion's share in most of the other classes.

GAME.—Black-breasted and other Reds.—Chickens.—1 and 2, J. Fletcher, Stoneclough. 3, C. W. Brierley, Middleton. *hc*, C. F. Barnett, Biggleswade; F. H. Wright, Halifax. *c*, S. Mathew, Stowmarket; T. P. Lyon, Liverpool; J. Wood, Wigan; J. Spencer, Clayton, Bradford. Cockerel.—Cup, Miss Aykroyd, Eccleshill, Leeds. 2, J. Fletcher. *hc*, E. Mann, Whitfield, Manchester; J. Fletcher.

GAME.—Any other Variety.—Chickens.—1 and 2, J. Fletcher. 3, T. P. Lyon, Liverpool. Cockerel.—1, H. Dixon, Farnfield, Southwell. 2, J. Fletcher. Pullets.—Cup, Miss Aykroyd. 2, T. P. Lyon, Liverpool. 3, W. E. Oakley, Atherstone. 4, J. Forsyth, Wolverhampton. *hc*, E. Mann, Whitfield, Manchester; J. Fletcher; H. Dixon, Farnfield, Southwell; W. E. Oakley, Atherstone; Morris & Woods, Atherstone; T. Hope, Nantwich; W. H. L. Clare, Twycross, Atherstone; C. W. Brierley, Middleton. *c*, W. J. Pope.

SPANISH.—Chickens.—Cup, C. W. Brierley. 2, J. Walker, Standford, Wolverhampton. 3, H. Wilkinson, Earby, Skipton. Cockerel.—1, J. Bowness. 2, J. Walker. *hc*, C. W. Brierley, Middleton. Pullets.—1, C. W. Brierley.

DORKINGS.—Chickens.—Cup, F. S. Arkwright, Sutton Scarsdale, Chesterfield. 2, W. W. Rutledge, Shortend, Kendal. 3, W. H. King, Rochdale. *hc*, J. J. Wier, Kendal. Cockerel.—1, F. S. Arkwright. 2, C. Cartmel, Kendal. *hc*, E. Fearon, Whitehaven; Conness of Tankerville, Chillingham Castle, Alnwick. Pullets.—1, W. W. Rutledge. 2, F. S. Arkwright. *hc*, E. Fearon; R. W. Beachey, Kingskerswell.

BRAHMA FOOTRA.—Chickens.—1, T. F. Ansdeil, Cowley Mount, St. Helens. 2, W. A. Taylor, Manchester. 3, Hon. Mrs. A. B. Hamilton, Woburn. *hc*, H. Lacy, Hebden Bridge. *c*, F. Bennett, Shipfall. Cockerel.—1, H. Lacy. 2, A. G. Willis, Birkdale Park, Southport. *hc*, F. S. Arkwright; E. Frichard, Teitenshall, Wolverhampton. *c*, E. Ryder, Hyde; J. W. Will, Erol. Pullets.—Cup, Horace Lingwood, Cleaving, Needham Market. 2, H. Lacy. *hc*, J. W. Will; Hon. A. B. Hamilton; J. Earnshaw, Rotherham; E. Frichard; M. Leno, Markyate Street, Dunstable; T. F. Ansdeil.

COCHIN-CHINA.—Buff and Cinnamon.—Chickens.—1 and 3, W. A. Taylor. 2, C. Sidgwick, Rydalsden Hall, Kewley. Cockerel.—1, W. A. Taylor. 2, C. Sidgwick. Pullets.—1, C. Sidgwick. 2, E. Fearon, Whitehaven. *hc*, Rev. C. Spencer, Boothstown, Manchester.

COCHIN-CHINA.—Any other Variety.—Chickens.—Cup and 2, W. A. Taylor. 3, C. Sidgwick. *hc*, Whitehead & Beachey. Cockerel.—1, W. A. Taylor. 2, C. Sidgwick. *hc*, Whitehead & Beachey. Pullets.—1, C. Sidgwick. 2, Whitehead & Beachey.

HAMBURGS.—Gold-pencilled.—Chickens.—1, H. Beldon, Goitstock, Bingley. 2, T. Wrigley, jun. 3, H. & A. Gill, Crawshawbooth, Rawtenstall. Cockerel.—1, J. Bowness. 2, T. Wrigley, jun. Pullets.—1, Burch & Boulter, Sheild. 2, T. Wrigley.

HAMBURGS.—Silver-pencilled.—Chickens.—1, J. Bowness. 2, Countess of Tankerville. 3, H. Beldon. *hc*, W. M. Mann, Kendal. Cockerel.—1, W. M. Mann. 2, J. Bowness. Pullets.—1, J. Bowness. 2, T. Hanson, Keighley. *hc*, Countess of Tankerville.

HAMBURGS.—Gold-spangled.—Chickens.—1, T. May, Wolverhampton. 2, W. A. Hyde, Hurst, Ashton-under-Lyne. 3, T. Boulton, Hanford, Stoke-on-Trent. *hc*, N. Marlor, Denton, Manchester. 2, Stanley, Moston Colliery, Fallowfield. Cockerel.—1, T. Boulton. 2, R. Simpson, Hollinwood, Manchester. *hc*, G. and J. Duckworth, Church, Accrington. Pullets.—1, J. Chadderton, Chadderton, Manchester. 2, E. Brierley, Heywood.

HAMBURGS.—Silver-spangled.—Chickens.—Cup, J. Fielding. 2, J. Lancashire, Middleton. 3, J. H. Booth, Holmfirth. *hc*, H. Beldon. Cockerel.—1, J. Fielding. 2, G. & J. Duckworth. Pullets.—1, Ashton & Booth, Broadbottom. 2, G. Mitchell, Keighley. *hc*, J. Fielding. 2, Stanley, Moston Colliery, Fallowfield.

HAMBURGS.—Black.—Chickens.—1, Countess of Tankerville. 2, C. Sidgwick. 3, J. Bowness. *hc*, C. Sidgwick; W. A. Taylor; J. Garside, Longlands, Slaithwaite. Cockerel.—1, W. A. Taylor. 2, C. Sidgwick. Pullets.—1, H. Hoyle, Lumb, Newchurch, Manchester. 2, J. Moore, Bingley. *hc*, W. Holt, Middleton.

BANTAMS.—Game.—1, T. Barker, Buxley. 2, J. W. Morris, Rochdale. 3, W. F. Steel, Halifax. *hc*, W. F. Addie, Fulwood, Preston; W. F. Steel. Cockerel.—1, J. W. Morris, Rochdale. 2, W. F. Steel. 3, H. Dixon, Farsfield. *hc*, G. May, jun., Wavertree, Liverpool; Capt. Wetherall, Loddington, Kettering; W. Adams, St. Clements, Ipswich; T. Sharples, Forest Bank; W. F. Entwistle, Westfield, Bradford (2).

BANTAMS.—Any other Variety.—Cup, M. Leno. 2, E. Walton, Horncliffe, Rawtenstall. 3, R. H. Ashton.

FRENCH FOWLS.—Chickens.—Cup and 2, R. B. Wood, Uttoxeter (Crève-Cœur and Houdans). 3, J. J. *hc*, W. B. Wood (Houdans). Cockerel.—1, R. B. Wood (Houdans). 2, E. Pritchard, Tettenhall, Wolverhampton. *hc*, R. B. Wood (Houdans); J. J. Malden. Pullets.—1, R. B. Wood (Crève-Cœur). 2, J. J. Malden (Crève-Cœur). *hc*, C. H. Smith, Radcliffe-on-Trent; W. Dring (Houdans); F. Bennett, Shiffall.

ANY OTHER VARIETY.—Chickens.—1, H. Beldon. 2, W. Fearnley, Lowton, Newton-le-Willows. 3, P. Unsworth, Lowton, Newton-le-Willows. *hc*, A. Aldersley, sunny Bank, Keighley. Cockerel.—1, A. Aldersley. 2, W. Fearnley. Pullets.—1, W. F. Unsworth. 2, P. Unsworth.

SELLING CLASS.—1, C. W. Brierley. 2, Hon. Mrs. A. B. Hamilton. 3, Countess of Tankerville. *hc*, J. Lee, Middleton. Cockerel.—1, C. W. Brierley. 2, E. Leech, Rochdale. *hc*, Furness & Sudall, Rawtenstall. Pullets.—1, C. F. Barnett, Biggleswade. 2, E. Ryder, Hyde.

DUCKINGS.—Aylesbury.—1, 2, and 3, E. Leech. *hc*, J. Hedges, Aylesbury. Rouen.—Cup, T. Wakefield. 2, D. Knott, Smallwood, Lowton, Newton-le-Willows. 3, P. Unsworth. *hc*, T. Wakefield; P. Unsworth. Any other Variety.—1 and 2, H. B. Smith, Brooklands, Broughton, 1 r stone. 3, M. Leno. *hc*, C. F. Barnett, Biggleswade (East Indian); J. J. Malden (Black East Indian), Countess of Tankerville (Shell).

GOSLINGS.—1, E. Leech. 2, J. Hindle, Over Darwen. *hc*, E. Leech; Mrs. Hornby, Rowton, Hull; G. F. Statter, Broomhill, Carlisle.

TURKEYS.—1, E. Arnold, Whittlesford, Cambridge. 2, E. Leech. *hc*, G. F. Statter.

EXTRA STOCK.—*hc*, Countess of Tankerville (Gold Pheasants).

PIGEONS.

TUMBLERS.—Almond.—1 and 3, R. Fulton, New Cross, London. 2, E. Horner, Harewood, Leeds. *hc*, J. Fielding, jun., Rochdale; R. Fulton. Any other Variety.—1, R. Fulton (Black Mottles). 2, E. Horner. 3, R. Minnitt, Healey Vicarage, Rochdale. *hc*, R. Fulton; R. Minnitt. *hc*, H. Yardley, Birmingham.

BALDS OR BEARDS.—1, J. Fielding, jun. 2 and 3, R. Fulton. *hc*, W. Woodhouse, Lynn (2).

CARRIERS.—Cock.—1 and 3, R. Fulton. 2, E. Horner. *Hen*.—1 and *hc*, R. Fulton. 2 and 3, E. Horner.

POUTERS.—Cock.—1, 2, and *hc*, R. Fulton. 3, E. Horner. *hc*, W. Stiles, Rushton, Kettering. *Hen*.—1 and 2, R. Fulton. 3, W. Stiles. *hc*, E. Horner.

BARBS.—1, R. Fulton. 2, A. Justice, Salford. 3, J. Fielding, jun.

TURBOTS.—1, W. Lumb, Brotherton Hall, Roehdale. 2, E. Horner. 3, T. B. Bowers, Melington, Chester. *hc*, J. Fielding, jun.; R. Fulton.

JACOBS.—1 and 2, R. Fulton. 3, E. Horner. *hc*, W. Kitchen, Feniscowles, Blackburn. *hc*, H. Yardley.

FANTAILS.—1, J. Kemp, Haslingden. 2 and *hc*, E. Horner. 3, J. F. Loveridge, Newark. *c*, J. Walker, Newark.

OWLS.—1, 2, and 3, J. Fielding, jun. *hc*, R. Fulton; E. Horner.

NUNS.—1, J. Watts, King's Heath, Birmingham. 2, J. B. Bowden, Blackburn. 3, E. Horner. *hc*, T. F. Bowers, Melington, Chester.

DRAGONS.—1 and 2, J. Holland, Manchester. *hc*, F. Graham, Birkenhead; R. Fulton; E. Horner; W. H. Mitchell, Mosely, Birmingham. *c*, R. Fulton.

TRUMPETERS.—1, Cup, and 2, R. Fulton. 3, E. Horner.

BELGIAN.—Long-faced.—1, E. Horner. 2, J. W. Collinson, Halifax. 3, W. Bourne, Shaw Heath, Stockport. *hc*, F. H. Taylor, Middleton. *Short-faced*.—1, A. Justice. 2, W. H. Mitchell. 3, E. Horner. *hc*, W. Bourne; J. Stanley, Blackburn (2).

ANY OTHER VARIETY.—1, H. Yardley. 2, E. Horner. 3, T. B. Bowers. *hc*, W. Kitchen.

SELLING CLASS.—1, W. Nottage, Northampton. 2, A. Ashton, Middleton. 3, L. Watkin, Northampton. *hc*, A. Ashton; W. Eckersley, Stoneclogh, Manchester. *c*, J. Fielding, jun.

RABBITS.—Spanish.—1, J. Irving, Blackburn. 2, J. C. Bell, Highgate, Kendal. *Angora*.—1 and 2, W. Whitworth, jun., Longsight, Manchester. *hc*, J. Baron, Rochdale; S. G. Hudson, Hull. *c*, J. Boyle, jun., Blackburn. *Himalayan*.—1 and 2, S. Ball, Bradford. *hc*, W. H. Tomlinson, Newark (2). *Silver-Gray*.—1, J. Boyle, jun., Blackburn. 2, J. Irving. *hc*, S. G. Hudson, Hull. Any other Variety.—1, W. Whitworth, jun. (Patagonian). 2, J. Baron, Rochdale. *hc*, J. Irving (Belgian); J. Boyle, jun. *Selling Class*.—1, W. Higham, Middleton. 2, B. S. Rothwell, Rochdale. *hc*, S. Buckley, Healey, Rochdale; J. Baron.

JUDGES.—Poultry: Mr. S. Fielding, Trentham Park, Stoke-on-Trent; Mr. R. Teebay, Fulwood, near Preston; Mr. J. Dixon, Bradford, Yorks. Pigeons and Rabbits: Capt. Heaton, Worsley, near Manchester.

ROYAL BUCKS POULTRY SHOW.

Too much praise cannot be expressed of the care taken of the birds by the Committee during the Exhibition. The entries were small in number, so many exhibitions being held the same week in the north, but seldom were so few indifferent birds seen in any show. The money prizes were liberal, but, in addition, Mrs. Lee, Hartwell Park, gave a five-guinea cup for Dorkings; Lord Boston gave a three-guinea cup for Brahmas; Mrs. J. K. Fowler a three-guinea cup for Spanish; N. M. de Rothschild, Esq., a five-guinea cup for Game; Lady A. de Rothschild and

S. G. Smith, Esq., M.P., each a five-guinea cup for Aylesbury Ducks; the Duchess of Buckingham a five-guinea cup for Rouen Ducks; E. M. Lucas, Esq., a three-guinea cup for Geese; and Messrs. Field & Son a silver cream-jug for Hamburgs. The first and second-prize Dorkings were far superior to the others. But the pen that attracted most attention in the Show was the first-prize Buff *Cochins* of Lady Gwydyr's. Only one thing was wanting—namely, size; colour, shape, and head were perfection. Her ladyship's first-prize Dark *Brahmas* were very fine. In the Duckwing Game the second-prize pen was an example of the carelessness of exhibitors putting birds together that were unknown to each other, as the cock had nearly eaten up the hen. In the French class a Crève-Cœur cockerel in the first pen was as fine as could be exhibited.

Aylesbury Ducks were not so good as might be expected at their native place, though in weight they far distanced the Rouens. In weight Aylesburies were 18lbs. and Rouens 14½ lbs. per pair. Mr. Fowler's Geese were very good.

The Rev. G. F. Hodson, North Petherton, was Judge. The following were his awards.

DORKINGS.—1 and Cup, Lord Chesham, Latimer. 2, L. Patton, Hillmore Taunton. 3, W. Harvey, Sheffield. *c*, C. A. Barnes, Chorley Wood, Herts.

BRAHMAS.—1 and Cup, Lady Gwydyr, Stoke Park, Ipswich. 2, T. F. Ansell, Cowley Mount, St. Helens. 3, M. Leno, Dunstable. *hc*, F. Harris, Ramsgate; J. E. Fowler, Aylesbury.

SPANISH.—1 and Cup, W. R. Bull, Newport Pagnell. 2, E. Jackson, Wolverhampton. 3, J. K. Fowler. *c*, C. Rodwell, Buckingham.

COCHINS.—Buff.—1 and Cup, Lady Gwydyr. 2, H. Tomlinson, Birmingham. 2, J. Bloodworth, Cheltenham. *Partridge*.—1, E. Tudman, Whitechurch, Salop. 2, J. K. Fowler. 3, H. Tomlinson. *White*.—1 and 3, R. S. Woodgate, Pembury, Tunbridge Wells. 2, J. Bloodworth.

GAME.—Black-breasted and other Reds.—1 and Cup, Duke of Sutherland, Trentham Hall, Stoke-on-Trent. 2, S. Mathew, Stowmarket. 3, E. W. Southwood, Fakenham. Any other Colour.—1, S. Mathew. 2, J. Fletcher, Stoneclogh, Manchester.

FRENCH.—1 and Cup, R. B. Wood, Uttoxeter, Staffs. 2, J. K. Fowler. 3, J. J. Malden, Biggleswade. *hc*, R. B. Wood; W. Harvey. *c*, Rev. N. J. Ridley, Hol-lington House, Newbury.

HAMBURGERS.—Gold or Silver-pencilled.—1 and Cup, W. Speakman, Nantwich. 2, S. Burn, Whitty. 3, R. S. S. Woodgate. *hc*, Duke of Sutherland. *Gold or Silver-spangled*.—1 and *c*, Mrs. Senior, Aylesbury. 2, Duke of Sutherland. 3, J. Messor, Reading. *hc*, L. H. Ricketts, Banwell.

GAME BANTAMS.—3, Lord Chesham.

BANTAMS.—1 and 2, M. Leno. 3, J. Watts, King's Heath, Birmingham. *c*, Lord Chesham.

DUCKS.—Aylesbury.—1 and Cup, T. Kingsley, Boarscraft. 2, J. Hedges, Aylesbury. 3, J. K. Fowler. *hc*, W. Castle, Aylesbury. Rouen.—1 and Cup, L. Patton. 2, W. H. Robson, Louth. 3, C. A. Barnes. Any other Variety.—1, Capt. C. F. Terry, Burvale, Walton-on-Thames. 2 and 3, H. B. Smith, Preston. *hc*, S. Burns; J. Watts; Capt. C. F. Terry.

DUCKS.—Aylesbury.—1 and Cup, J. Funge, Long Marston.

GESE.—Cup, 1, and 2, J. K. Fowler. 3, T. Kingsley.

SELLING CLASS.—1 and 3, J. K. Fowler. 2, Viscount Turnour, Petworth.

WORCESTER CITY AND COUNTY POULTRY AND PIGEON SHOW.

This revival was held on the 18th inst. in the Corn Exchange, Worcester, and we anticipate that it will be successful, for the Committee are men of good judgment. We have not received our usual report of the poultry department, but we are informed there were nearly three hundred entries. The Dorkings were not generally superior, but all the *Cochin* classes were good; and the cup birds especially excellent. The Game classes were not good, but the pens of Hamburgs, especially the Golden-spangled which won the cup, were all good. We can only mention further that in the Variety class of Ducks was a pen of a kind quite new and unknown before to the Judges.

Pigeons.—Carrier cocks were good; the winners were Blacks. For Carrier hens the first prize went to a fair Dun, a Black being second. The winning birds in the Pouter cock class were remarkably good, the first-prize Blue measuring 19½ inches long and 7½ in limb; a White was second, 19½ in length and 6½ inches in limb. In the Pouter hen class a wonderfully good Blue was first, measuring 18½ in length and 6½ in limb; the second prize was awarded to a Yellow, 18½ in length and 6½ in limb. The awards in the Barb class went to Black and Yellow. The Almond Red was especially good. In Tumblers, Any other variety, Red Agates were first and second. Fantails were good; Whites first, Blues second. Dragons were a fair class; a well-matched pair of Yellows first, Blues second. Antwerps were a strong class of thirteen entries, a wonderful pair of well-matched Red Chequers being first, Silver Duns second. In the Jacobin class Reds were first and second. Of Trumpeters there were only three entries, Blacks first and Whites second. Nuns were a moderate class; and in the Any other variety class Blondinettes were first, Blue Swallows second, Archangels and White Owls were highly commended and commended. The remainder of the class consisted of Silver Runts, Scandaroons, and Working Antwerps. We certainly should have been pleased to have seen more entries, and a stronger competition for the two five-guinea cups which were given in addition to money prizes, which were both won by Mr. Fulton with thirty-four points in Classes 23 to 27, and thirty-eight points in Classes 25 to 36 both inclusive.

DORKINGS.—1 and Cup, J. Martin, Claines. 2, L. Patton, Taunton. 3, Osborne Bros, Worcester.

SPANISH.—1 and Cup, W. R. Bull, Newport Pagnell. 2 and 3, E. Jones, Clifton.

COCHINS.—Cinnamon and Buff.—1, W. A. Taylor, Manchester. 2, Lady

Gwydyr, Ipswich. 3, H. Tomlinson, Birmingham. *hc*, H. Tomlinson; Mrs. Allsop, Worcester; T. Basset, Bath. *c*, A. Darby, Bridgnorth.

COCHINS.—*Any other Variety*.—1 and Cup, E. Tudman, Whitchurch, Salop. 2, Whitehead & Beechey, Kingskerswell, Devon. 3, E. Tudman. *hc*, R. S. S. Toodegate, Tunbridge Wells; G. Leas, Cornwall; M. M. Cashmere, Loughborough; C. Chase, Birmingham; A. J. E. Smude, Capt. Coleridge, *c*, R. S. S. Woodgate; H. Tomlinson; R. Chase.

BRAHMS.—*Dark*.—1, Lingwood, Cretingham, Suffolk. 2, Lady Gwydyr, 3, E. Ensor, Bristol. *hc*, Mrs. E. A. Bailly, Tenbury; J. Bowen, Talgarth; Hon. Mrs. A. B. Hamilton. *c*, F. Sabin, Birmingham.

BRAHMS.—*Light*.—1 and Cup, Miss A. Williamson, Leicester. 2, T. A. Dean, Maud, Hereford. 3, E. D. Maddox, Launceston. *hc*, Miss A. Williamson; T. A. Dean. *c*, T. A. Dean; C. Walters; J. B. Weeks, Bromyard; M. Leno.

GAME.—*Black-breasted and other Reds*.—1, E. Winwood. 2, Osborne Bros. 3, F. H. Wright, Halifax.

GAME.—*Any other Variety*.—1 and Cup, J. Andrews, Worcester. 2, J. Fletcher, Manchester. 3, S. Mathew. *c*, W. Phillips, Worcester.

HAMBURGS.—*Silver-pencilled*.—1, Duke of Sutherland, Stoke-on-Trent. 2, H. Pickles, Skipton. *hc*, W. Griffith, Worcester. *Golden-pencilled*.—1, W. Speakman. 2, H. Beldon, Bigley. *hc*, H. Beldon; H. Pickles; Duke of Sutherland. *c*, C. Bloodworth.

HAMBURGS.—*Silver-spangled*.—1, Duke of Sutherland. 2, J. Fielding, Newchurch. *hc*, Ashton & Booth; H. Beldon. *Golden-spangled*.—1 and Cup, Duke of Sutherland. 2, R. H. Ashton, Manchester.

POLANDS.—1, H. Beldon. 2, P. Unsworth, Newton-le-Willows. 3, H. Beldon. *hc*, G. Aldous, Birmingham; *c*, H. Beldon.

ANY OTHER VARIETY.—1 and Cup, Duke of Sutherland. 2, J. Hinton, Warminster. 3, R. B. Wood, Uttoxeter. *hc*, W. Dring, Faversham; W. Cutlack, Cambridge; J. J. Malden; H. Pickles; Mrs. Winfield, Worcester. *c*, Rev. N. J. Ridley, Hexham; H. Beldon; E. Smith, Timperley.

GAME BANTAMS.—*Black-breasted and other Reds*.—1 and Cup, J. Martin. 2, H. Shumach, Southend, Notts. *hc*, E. Davis, Worcester; Wingfield & Andrews, Worcester; Mayo, Worcester. *c*, H. Ashley, Worcester.

GAME BANTAMS.—*Any other Variety*.—1 and Cup, W. Barton, Haslingden. 2, H. Shumach. *hc*, Cooper, Chippenham; W. Adams, Ipswich; Bellingham and Gill, Burnley.

BANTAMS.—*Black or White*.—1 and 2, Lady C. Morton, Tortworth Court. *hc*, H. Beldon; J. Watts. *c*, R. H. Ashton, Wingfield & Andrews.

BANTAMS.—*Any other Variety*.—1 and 2, M. Leno. Local Cup, J. Martin.

DUCKS.—*Aylesbury*.—1 and Cup, J. K. Fowler. *c*, T. Seaton, Tengenwick; J. F. Davis, Neath. *Rouen*.—1, P. Unsworth. 2, J. H. Hoil, Cornwall. *hc*, W. Stephens, Gloucester; T. Wakefield. *c*, J. Watts. *Any other Variety*.—1 and 2, M. Leno. *hc*, G. Saunders, Devizes; M. Leno; J. Watts. *c*, J. J. Malden.

SELLING CLASS.—1, Mrs. Allsop. 2, Mrs. Winfield. 3, J. Bloodworth. *c*, E. Smith; Mrs. Winfield; J. Watts.

PIGEONS.

CARRIER.—*Cock*.—1, R. Fulton, London. 2, H. Yardley, Birmingham. *hc* and *c*, R. Fulton. *Hen*.—1, T. H. Watkins, Hereford. 2, *hc*, and *c*, R. Fulton.

POUTER.—*Cock*.—1, 2, and *c*, R. Fulton. *hc*, H. Yardley. *Hen*.—1 and 2, R. Fulton. *hc*, H. Yardley.

BARBS.—1 and *hc*, R. Fulton. 2, H. Yardley.

TUMBLERS.—*Almond*.—1, 2, and *hc*, R. Fulton. *c*, H. Yardley. *Any other Variety*.—1 and *hc*, R. Fulton. 2, H. Yardley. *c*, J. Watts.

TANTAILS.—1, R. Fulton. 2 and *hc*, H. Yardley. *c*, J. F. Loversidge, Newark.

DECOY.—1 and 2, W. H. Mitchell, Birmingham. *hc*, R. Fulton. *c*, H. Yardley.

ANTWERPS.—1, H. R. Wright. 2 and *hc*, H. Yardley. *c*, H. H. Burrows.

JACOBS.—1, 2, and *hc*, R. Fulton.

TRUMPETERS.—1 and 2, R. Fulton.

NUNS.—1, H. Yardley. 2, J. Watts.

ANY OTHER VARIETY.—1, H. Yardley. 2, J. Watts. *hc*, J. H. Watkins. *c*, R. Pichard, Wolverhampton; R. Fulton.

JUDGES.—Mr. Tegetmeier, London, and Mr. Allsop, 51, Spencer Street, Birmingham.

NORTHAMPTON POULTRY SHOW.

THIS Show was held at Weedon, on the 17th and 18th of September. The following is the list of the awards:—

DORINGS.—1, R. Wood, Clapton, Thrapstone. 2, J. Longland, Grendon. 3, No competition. *Hens*.—1, J. Longland. 2, Rev. E. Bartrum, Berkhamstead. *hc*, R. Wood. *Chickens*.—1, Rev. E. Bartrum. 2, O. E. Cresswell, Early Wood, Bagshot. 3, R. Wood. *Pullets*.—1, J. Longland. 2, O. E. Cresswell. *hc*, J. Longland. 3, O. E. Cresswell. *hc*, R. Wood. *Cock or Cockerel*.—1 and 2, J. Longland. 3, O. E. Cresswell. *hc*, R. Wood.

SPANISH.—1, E. Jackson, Finchfield, Wolverhampton. 2, W. R. Bull, Newport Pagnell. 3, H. Yardley, Birmingham. *Chickens*.—1, W. R. Bull. 2, J. T. Parker, Northampton. *hc*, C. Wright, Northampton. *Cock or Cockerel*.—1, W. R. Bull. 2, H. Lloyd, jun., Handsworth, Birmingham.

GAME.—1 and *hc*, E. Cox, Moulton. 2, H. Lotan, Oundle. 3, J. Bishop, Dunstable, Northampton. *Chickens*.—1, J. Sargeant, Oundle, Northampton. 2, H. Lotan, Oundle. 3, E. Kirby, Weedon. *Cock or Cockerel*.—1, B. Cox. 2, T. Cook, Wellingborough. 3, W. A. Taylor, Florence, Weedon.

COCHIN-CHINAS.—1, H. Yardley, Birmingham. 2, W. A. Taylor, Manchester. 3, R. S. S. Woodgate, Pembury, Tunbridge Wells. *hc*, J. K. Fowler, Aylesbury. 4, H. Lloyd, jun., Handsworth. *Chickens*.—1, W. A. Taylor. 2, W. Birch, Coventry. *hc*, P. Passmore, Northampton; H. Lloyd, jun. *Cock or Cockerel*.—1, H. Lloyd, jun. 2, J. K. Fowler. *hc*, R. S. S. Woodgate.

BRAHMA POOTRA.—1, H. Yardley. 2, J. Watts. *c*, J. K. Fowler. *Chickens*.—1, J. K. Fowler. 2, Miss Fryer, Moulton Paddocks, Newmarket. *hc*, W. Birch, Barnsley, Coventry.

HAMBURGS.—1, B. Cox, Moulton. 2, T. Love, Kingsthorpe. *hc*, W. Pinfold, Weedon. *Chickens*.—1, H. Lloyd, jun. 2, P. Collins, Daventry. *hc*, B. Cox; H. Yardley. *c*, H. Piper, Oxford.

BANTAMS.—1, M. Leno, Markyate Street, Dunstable. 2, H. Yardley. *c*, H. Lloyd, jun.

ANY OTHER VARIETY.—1, J. K. Fowler. 2, Rev. N. J. Ridley, Newbury (La Fleche). *hc*, Rev. J. D. Peake, Laleham.

GEES.—1, J. K. Fowler. 2, T. Pell, Whiston, Northampton. *hc*, J. Sargeant; E. Judkins, Stowe, Weedon.

DUCKS.—*Aylesbury*.—1 and 2, J. K. Fowler. *Rouen*.—1, J. K. Fowler. 2, T. Burnaby, Pipewell. *hc*, J. K. Fowler; *con* and *Rev*, C. Vernon, Grafton Underwood, Kettering; R. Wood; W. Birch, Barnsley, Coventry. *Any other Variety*.—1, M. Leno (Carolinian). 2, J. K. Fowler. *hc*, G. H. Bold, Stowe, Weedon (American); J. Goodliff, Huntingdon (White Call); M. Leno (Mandarin).

TURKEYS.—1, J. K. Fowler. 2, No competition.

SELLING CLASS.—1, Lady D. H. W. Fitzwilliam, Wellingborough (Partridge Cochins). 2, M. Leno, Dunstable (Call Ducks). *hc*, H. Lloyd, jun. (Cochins). 3, P. Collins, Daventry; C. Wright, Northampton; Lady D. H. W. Fitzwilliam (Aylesbury and Geese); J. Goodliff, Huntingdon (White Chinese Geese); J. K. Fowler (3).

MISCELLANEOUS CLASS.—1, W. Nottage, Northampton (Spanish). 2, J. Longland (Turkies). 3 and 4, B. Cox, Northampton (Game and Hamburgs). *hc*, P. Collins, Daventry (White Cochins); E. Kirby, Weedon (Toulouse Geese); C. Wright, Northampton.

PIGEONS.—1 and *hc*, H. Yardley. 2, W. Nottage.

Mr. E. Hewitt, Sparkbrook, Birmingham, was the Judge.

LIGURIANISING.

THE following is a portion of my apiarian experience of the last twelve months as relating to ligurianising, &c. I received five queens last autumn from Messrs. Neighbour & Sons, all of which were lost on giving them to their intended new subjects, except one, which was given in the following manner—viz., the stock of bees were driven into an empty hive, knocked on to a cloth, and their queen captured. The bees were then slightly sprinkled with scented syrup, also the new queen; she was then quietly placed amongst the bees on the cloth, and they, apparently, regarded her as their own rightful sovereign. The cloth was then lifted on one side and fastened to the front of their hive, and all ascended with a joyful buzz to their old quarters, where the new queen has this summer proved herself a very prolific one.

Three of the other queens were given in the way in which I usually proceed when transferring them to a new regency, and which, with black or hybrid queens has always succeeded—that is, the queen, instead of being placed on the cloth, was put on one of the combs in the hive whence the bees had been driven, no syrup being used, and the bees were then allowed to go back to her. These three were missing. The remaining one was put under a queen-cage in a bar-and-frame hive, which had been deprived of its queen some days previously. She was afterwards found to have been liberated by the bees eating away the comb; she, too, was gone. This hive and the three former ones each reared a drone-breeding queen.

Do you think it probable that the bees would more readily receive an Italian queen if all their brood were destroyed, say by driving a day or two before giving the queen, and letting their hive remain tenantless? We had four fine pure queens hatched early in May last, and hoped they would be fertilised by some small Ligurian drones which were being numerously bred in a strong stock, headed by a non-impregnated queen kept for the purpose of breeding pure drones; but the queens were some of them lost by taking their flight whilst the weather was so unusually cold, and the rest remained unfertilised. Have the small drones bred in worker cells the capability of fulfilling their office? I hope to be more fortunate in adding some new queens this autumn.—S. B., Knowle.

BEEES AND HONEY AT FLOWER SHOWS.

I READ with very great pleasure "J. E. B.'s" account of the exhibition of bees and honey at the Burton Floral and Horticultural Meeting. I may just say that last year was the first time they introduced bees at their Exhibition. I myself entered six hives and some honey last year, and on attending it was forced to confess that their Show far eclipsed any other I had ever seen before. I am only sorry that all the flower shows do not give prizes for bees, honey, &c., being, as they are so often, associated with flowers. I believe the Middleton Agricultural Show was the first to introduce bees, then followed Bury, and this year the East Cheshire Agricultural Society have given prizes. The Middleton Show has taken place this week, but owing to the wet weather all the bee-masters did not put in an appearance. Mr. Breen, of Manchester, took the first prize in bees and honey with a very good Woodbury hive, and a fine glass of honey, I think near 40 lbs. weight; he also took the first prize at the East Cheshire last week. In introducing this matter to committees one thing must be borne in mind—that prizes should be divided into two classes, one for the best collection of fancy hives, and one for the best two or three hives for cottagers, to be judged by weight, for it is not in the power of all the working class to buy a Neighbour or a Woodbury hive. I would also recommend the giving of prizes for honey in glasses and for straw supers. We should not have had very heavy supers here in South Lancashire had it not been for the heather being so good this year. I have had sixteen hives upon the moors this season, and they have all done very well. My first swarm issued May 27th, and I had not another until July 11th, and they kept swarming until July 29th. I had two swarms out of one hive in one day, and they have both done well. I don't think I ever knew bees to suffer more than they did in the month of June than they have done this year. I have brought my last lot from the heather to-day (September 21st), and they have also done well.—SOUTH LANCASHIRE BEE-KEEPER.

THE QUEEN'S MATES.

IS it not the case that the queen bee seeks to mate with other drones than those of the hive to which she belongs?—J. S.

[Your query, we fear, will hardly receive an answer that will satisfy your mind, owing to the almost impossibility of tracking the young princesses on their hymeneal expeditions. There can be no doubt that they often do mate with foreign drones, hence the difficulty of maintaining the purity of the Italian blood in our apiaries. But if your supposition be true as a rule, it is a testimony of nature against "breeding in-and-in."]

OUR LETTER BOX.

CHESTER POULTRY SHOW.—We have only just received the prize list. It shall be published next week.

BRASSIA PULLETS FAT (Ignoramus).—It is natural for a pullet to put on fat before she lays; but the fat that is put on by high feeding four times per day, is not only wasteful, but it is injurious to the birds. You must not be guided by books entirely. A tyro will see whether birds are growing satisfactorily; and if you do not know it we will tell you, that to be fattened is to be spoiled, when the subject is a laying pullet. This is the frequent cause of death in the early days of laying. Where there is a good run, the midday meal may be almost an imaginary one, while those of morning and evening should be "pieces de resistance."

DUCKLINGS' WINGS TWISTED (J. G. A. B. B.).—The wings will never come right. It is a deformity. It is fatal to exhibition birds, and it is hereditary, as we know to our cost. If all the ducklings came with it, the seller of the eggs should make you some reparation.

SPANISH FOWLS LOSING THEIR NECK FEATHERS (Subscriber).—You should tell us more. The space is good and ample. Has it any sun? We suppose not. Is it paved? We suppose it is, as it has no herbage. Admitting our supposition to be correct, it is an unfavourable place; but if people anxious to keep poultry would be as painstaking in providing for them as those are in finding places at windows, on leads, and in yards, and in commanding soil when they want to grow flowers, and have not an inch of ground on which to do it, we should hear of less disappointment, and success would be the rule. The feathers are picked from each other by their fellows. Their organs are deranged, and they require something they cannot get. The nearest approach to it is feathers, therefore they eat them. In this, as in all other mischief, there are ringleaders. Watch and remove them. Shut them up separately. When they are moulting you may turn them out with impunity. Turn to landscape gardening for your fowls. Get some cartloads of road grit and gravel; put them in heaps about the haunts of the fowls and add to them some large sods of growing grass; put them on the tops of the heaps. Get some seedling lilies, and stick in the heaps so that they will stand a good pull. Fowls must scratch if they are to be healthy, and they cannot do so on the hard unyielding flooring of an ordinary yard. It is not the exercise they want; but when they are scratching they turn the earth over, and discover all sorts of things that we cannot see, but that are, nevertheless, essential to their well-doing. An uneven surface is also better for them than a level one. Feed on ground oats or barley meal and house scraps, but above all let your birds have plenty of green food.

REARING OF GAME FOWLS, &c. (Mans).—Any of the many poultry books will give you all the information you require as to the points and rearing of Game fowls, &c., but none will give you a list of all the different sorts past and present. With the prohibition of cock-fighting, the local breeds were discontinued, and since the introduction of shows the list has been still lessened. The Blacks, Duns, Whites, Blues, and Brassy-winged are seldom seen, the lists are made up of Black and Brown Reds, and Duckwings. It is only those which pay that are kept. The list would be a curious one, and some of the old names in papers in our possession are far more vigorous than refined.

GESE EGG-HATCHING (E. H.).—Your water accommodation is sufficient for any Geese and for any number. Cochins-China or Dorking hens can only cover four or at most five eggs. Are there not common Geese kept in your neighbourhood? We are never friendly to the mixture of sitting and non-sitting breeds. You cannot distinguish the eggs. If you can buy or hire common Geese for sitting, keep the Toulouse. If you cannot, keep the common.

POULTRY-KEEPING (Yorkshire).—You will find none of the non-sitters that will be confined by a fence 4 feet high. They are wanderers. You can shut-up your breeding stock in the half-acre you devote to them. If you sow your grass seeds at once the ground will be well settled before you have chickens to run upon it. If you propose to wall-in your fruit garden, you could easily and cheaply make your fowl-house by building against the wall at either end, and have a south-west aspect. Although not essential, this latter is an advantage. A wooden house with a slate or tiled roof would answer every purpose, and is very durable if it is kept tarred every year. Any poultry book will tell you how to make the house. If you keep fowls in any numbers they must have access to the acre and a half you intend to cultivate, but you may shut them out while the chickens are very small. You will find it convenient to have another small house, a wooden one built against the wall in the opposite corner; it would do for food, &c., and would be a convenient place for a few laying hens. You can get a man to do all you want for the wages you name, provided you are mostly at home, and the requirements of the garden are not too great. Your wages are good. We know no place where you could see what you describe. We advise you to buy Eaily's book, as a plain and practical treatise, and to begin in a small way, enlarging and acting on your own experience. There is more learned by losing a pound than by reading three books. The profit of your poultry will from your description depend much on eggs. They are most profitable in the winter, and only pullets lay then. Your table poultry will be most profitable if produced early before others have it. Anything you produce will make a better return if you have it when others have not, and it is more valuable if produced before than after its natural season. You may sow grass at any time, subject to repeating the operation in case of entire or partial failure. We always write to Messrs. Sutton, of Reading, stating our requirements, and have every reason to be satisfied with their mixtures. There is no such thing as a poultry farm in England. We know no breed that will suit you better than Brahmas. In catering for a market be sure to kill them young. A small quantity of good succulent meat is more valuable than a larger of hard tasteless food.

AYLESBURY DUCK'S BILLS SPOTTED (R. Jones).—The spots you mention are very common, even among the best birds. They are not indicative of impurity, but they are a great disadvantage at an exhibition. We know no safe mode of removing them. Where they are quite superficial they may be removed with pumice-stone, but there is always the danger of causing bleeding and disfigurement.

CRYSTAL PALACE POULTRY SHOW (An Exhibitor).—When the schedules are ready we have no doubt that it will be duly announced.

MANAGEMENT OF FANTAIL PIGEONS (R. E. H.).—Fantails require no particular management, except that they should have roomy nesting places, so that their tails should not be broken or in any way injured. Make their nests of short straw cut into lengths of about 3 inches. Feed them twice a day—in the morning at nine, and in the afternoon at three, sometimes on brown peas, at other times on small Indian corn.

BEE, BEE HIVES, AND HONEY.—In the notice of Burton-on-Trent Floral and Horticultural Exhibition, instead of Mr. J. Young, Hornington, it should have been Mr. Charles Young, Hornington, near Burton-on-Trent; and in the

prizes for honey the second prize was awarded to Mr. Young for a super containing 35 lbs. nett., and not to Mr. J. Pegg.

WASHING PIGEONS (G. H. G.).—Wash the worst of the dirt off with tepid water, and let them afterwards have a pan of clean water daily; they will wash themselves every morning.

COMB BROKEN DOWN—FEEDING (J. G. Webber).—By all means feed at once, and liberally, as we are doing with some of our own stocks that are weak in supplies from overwarming. The bees no doubt have put all to rights in the hive, and there is no reason they should not do well.

ELECTRO-PLATING (B. A.).—We know of no simple process.

TOMATO CHEETNEY.—H. J. N. wishes for a recipe for making this.

METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		A.M.				IN THE DAY.						Rain.
1873. Sept.	Baromet- er at 6 a.m. and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Tem- perature.		Radiation Temperature.				
		Dry.	Wet.			Max.	Min	In sun.	On grass			
Inches.		deg.	deg.	S.W.	deg.	deg.	deg.	deg.	deg.	In.		
We. 18	29.705	59.5	55.4	S.W.	61.0	63.0	54.3	88.3	51.2	—		
Th. 19	29.623	54.7	51.4	W.	58.5	61.9	44.9	115.8	41.8	—		
Fri. 20	29.773	48.5	45.9	N.W.	56.9	57.0	38.8	101.8	36.3	—		
Sat. 21	29.750	47.2	44.3	S.W.	54.8	53.9	36.5	106.2	31.4	0.068		
Sun. 22	29.883	47.3	41.8	N.W.	53.0	56.8	34.4	101.2	32.4	—		
Mo. 23	29.908	47.4	43.9	S.W.	51.9	59.8	33.0	113.4	31.1	0.080		
Tu. 24	29.416	49.2	48.3	S.W.	53.2	50.1	45.6	76.8	43.8	0.250		
Means		29.728	50.5	47.1	55.6	53.5	41.1	98.9	38.7	0.728		

REMARKS.

18th.—Rather dull day, with cold wind; fine evening; and very bright moon-light night.

19th.—A beautifully bright and fine day; a few drops of rain once or twice, but too little to measure.

20th.—Rather cold and dull morning; afternoon very bright and fine, and the evening the same.

21st.—White frost in the early morning, which was fine and bright; a sharp shower about noon, then fine but cold.

22nd.—Very bright all day, but very cold.

23rd.—Very fine morning; rather cloudy in the afternoon; heavy rain commencing between 8 and 9 p.m., and continuing more or less all night; rather warmer.

24th.—Very dark, dull, rainy morning, but rather warmer; frequent rain during the day; but fine night.

A fall of 14° in the mean temperature at 9 A.M. (and of much more than that on several nights) since last week seems to have carried us into winter in a few days; but as the minimum on the 14th was more than 12° above that of the 23rd, it is to be hoped that we shall have some more fine autumn weather.

—G. J. SIMONS.

COVENT GARDEN MARKET.—SEPTEMBER 25.

THERE is no improvement to report here, business being very dull, and a poor attendance. The chief article in request is good French Pears, the home-grown supply being very limited at present; later sorts we hear are a better crop. Potato supply large, those which are free from blight making good prices.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	½ sieve	3 0 to 0	Mulberries.....	½ lb.	1 0 to 0
Apricots.....	doz.	0 0 0	Nectarines.....	doz.	0 0 0
Cherries.....	per lb.	0 0 0	Oranges.....	½ 10 8	0 14 0
Chicauts.....	bushel	0 0 0	Peaches.....	doz.	10 25 0
Currants.....	½ sieve	0 0 0	Pears, kitchen.....	doz.	1 0 8 0
Figs.....	doz.	0 0 0	dessert.....	doz.	2 0 0
Filberts.....	lb.	1 0 1 6	Pine Apples.....	½ lb.	3 0 6 0
Gooseberries.....	lb.	1 0 1 6	Plums.....	½ sieve	5 0 0 0
Grapes, bothhouse.....	lb.	2 0 5 0	Quinces.....	doz.	1 0 2 0
Lemons.....	½ 100	6 0 10 0	Raspberries.....	lb.	0 0 0 0
Melons.....	doz	0 5 0	Strawberries.....	½ lb.	0 0 0 0
			Walnuts.....	bushel	10 25 0
			ditto.....	½ 100	2 0 3 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	doz	2 0 to 4	Mushrooms.....	pottle	1 0 to 3 0
Asparagus.....	½ 100	0 0 0	Mustard & Cress.....	punnet	0 2 0 0
Beans, Kidney.....	½ sieve	2 0 0	Onions.....	bunch	0 2 0 4
Broad.....	bushel	0 0 0	pickling.....	quart	0 6 0 0
Beet, Red.....	doz.	1 0 3 0	Parsley per doz. bunches		2 0 3 0
Broccoli.....	bundle	0 9 1 6	Parsnips.....	doz.	0 9 1 0
Cabbage.....	doz.	1 0 1 6	Peas.....	quart	1 0 1 6
Capsicums.....	½ 10	2 0 3 0	Potatoes.....	bushel	3 0 5 0
Carrots.....	bunch	0 6 0 0	Kidney.....	do.	3 0 5 0
Cauliflower.....	doz.	2 0 4 0	Round.....	do.	3 0 4 0
Celery.....	bundle	1 6 2 0	Radishes.....	doz. bunches	0 6 1 4
Cowslips.....	doz. bunches	3 0 4 0	Rhubarb.....	bundle	0 0 0 0
Cucumbers.....	each	0 3 1 0	Salsafy.....	½ bundle	0 9 1 0
pickling.....	doz.	0 0 0 0	Savoy.....	doz.	0 0 0 0
Endive.....	doz.	2 0 0 0	Scorzenera.....	½ bundle	0 9 1 0
Fennel.....	bunch	0 3 0 0	Sea-kale.....	basket	0 0 0 0
Garlic.....	lb.	0 6 0 0	Shallots.....	lb.	0 3 0 0
Herbs.....	bunch	0 3 0 0	Spinach.....	bushel	2 0 3 0
Horradish.....	bundle	3 0 4 0	Tomatoes.....	doz.	1 0 0 0
Leeks.....	bunch	0 2 0 0	Turnips.....	bunch	0 3 0 0
Lettuce.....	doz.	0 9 1 0	Vegetable Marrows.....	doz.	0 6 1 0

POULTRY MARKET.—SEPTEMBER 25.

WE are now able to give a good guess as to the supply of Partridges. Young birds are decidedly scarce and small. It is impossible to disguise the fact that they decrease in numbers every year. There is no alteration in the poultry market, and little excitement at the approach of Michaelmas. Formerly the sale of Geese was very large at that time, but of late the consumption of them has been postponed to Christmas.

WEEKLY CALENDAR.

Day of Month.		Day of Week.	OCTOBER 3—9, 1872.		Average Temperature near London.			Rain in 43 years.	Sun Rises	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.			
						Day.	Night.	Mean.	Days.	m.	h.	m.	h.	m.	h.	Days.	m.	s.
3		TH	19 SUNDAY AFTER TRINITY. Twilight ends, 7.18 P.M.	63.7	41.5	52.6	16	6	af 6	31	af 5	43	6	8	af 6	1	11	7
4		F		63.7	42.4	53.1	21	8	6	29	5	59	7	24	6	2	11	25
5		S		60.5	40.3	50.4	21	10	6	26	5	17	9	43	6	3	11	43
6		SUN		61.8	43.2	52.5	22	12	6	24	5	37	10	7	7	4	12	0
7		M		63.7	43.4	53.6	21	13	6	22	5	59	11	41	7	5	12	17
8		TU		61.7	42.0	51.8	22	15	6	19	5	after.	28	8	6	12	34	
9		W		60.7	42.4	51.5	24	17	6	17	5	18	2	28	9	11	50	

From observations taken near London during forty-three years, the average day temperature of the week is 62.2°; and its night temperature 42.2°. The greatest heat was 80°, on the 5th, 1834; and the lowest cold 25°, on the 5th, 1865. The greatest fall of rain was 1.06 inch.

PEACHES FOR A COOL CLIMATE.

It has fallen to my lot to live among the hills of West Yorkshire, where the climate is, to say the least, a fortnight behind that of York. I consider the spring to be favourable if new Potatoes and a dish of Carter's First Crop Pea can be placed on the table by the 24th of June. The rainfall is about 36 inches, and this indicates no inconsiderable amount of wet days and cloudy weather: and yet, notwithstanding these disadvantages, Peaches can be successfully cultivated, and well ripened too, in the open air without the aid of glass or any artificial heat.

The last twelve months, however, have not been favourable for the cultivation of this fruit. The autumn of 1871 was wet, which retarded the ripening process. The broom had to be used repeatedly to remove some of the abundant foliage in order to let the air and sun harden the wood. Then February last was unusually warm, and the heat of the first week in March forwarded the opening of the blossom. On the 4th the first flowers expanded; the trees flowered abundantly, and showed no disposition to cast off their flowers, which unripe wood almost invariably does. Then winter in right earnest came down upon us; on the 19th a snowstorm, driven with the force of a westerly gale, cleared away all protecting materials, and beating against the trees covered the young fruit with snow, which froze there. This storm put an end to my Peach crop. Some late blooms escaped the general destruction, and have produced a few fine fruit on each of the older trees.

I have been much interested in reading, in the "Florist and Pomologist" for 1872, the result of the election of fruits. The six Peaches elected for amateurs and larger gardens are Bellegarde, Royal George, Barrington, Grosse Mignonne, Noblesse, Walburton Admirable. All these are either mid-season or late varieties; not one early Peach is mentioned. This will never do for those who live in cool climates. This is the 25th of September. My Royal George trees have borne a crop of fifty fruit, of which thirty-six are on the trees at this moment, and are not yet ripe. These will ripen by degrees if the sun will shine, but this luminary was lost in clouds on Sunday last, and has not been seen since; the consequence is the thermometer indicates at two o'clock a temperature of only 46°. The fourteen fruit of this sort which we have eaten were fine, juicy, melting, and very good; and they usually continue to be good to the end of the first week in October, which is as late as Peaches in ordinary seasons can be obtained fit for the dessert in the open air in this climate, so a later Peach than Royal George is not required. My Peach season would be short indeed if this were my earliest variety.

Early Peaches are of especial value in cool climates, for they ripen before the heat of the summer begins to decrease, and therefore their flavour and sweetness are fully developed. The first fruit of Early Victoria in 1869 and 1870 dropped from the tree ripe on the 18th of

August. This year it came off into my hand on the 23rd. This variety was raised by Mr. Rivers from Early York, and it is ten days earlier than its parent, and grows a larger fruit, which is always remarkably sweet, juicy, and excellent. It is very hardy, and is, in my opinion, the best early Peach for open walls. Usually about ten days after this Early York is fit for use. It is so well known that no description of it by me is needed. It succeeds well here, and is a hardy useful kind. It is, however, to a great extent superseded by Rivers's Early York. This fine Peach was ripe here this year on the 3rd of September. It comes into use just at the very time it is most needed, and it fills up the interval between Early Victoria and Royal George. The fruit is sweet, especially melting, and very good indeed; it ripens here without difficulty. Some of the fruit possesses a slight flavour of the Nectarine. The tree is hardy, healthy, and a free bearer. I am able to write with some confidence respecting these valuable Peaches, as they have been grown here from the time they were first sent out from the Sawbridgeworth Nurseries. Dr. Hogg is ready about the same time as Rivers's Early York, and though it has ripened well this unfavourable season, the flesh is neither so melting, nor so juicy, and not so highly flavoured as those I have previously mentioned, and though a good bearer, it is not quite so hardy as the other varieties. Early Rivers, Early Leopold, and Early Grosse Mignonne do not seem to admire this climate, since they put forth this spring a larger number of bloated deformed leaves than I care to see; while Royal George and those of the Early York strain had for the first time this year a leaf here and there deformed, but not to such an extent as to disfigure the general appearance of the foliage. Goshawk, said to be the best of Mr. Rivers's last batch of seedlings, is likely to be a good bearer, as the wood is ripening well, and the fruit-buds are well developed.

As far, then, as my experience goes, and it extends over a period of twenty years, the best three hardy Peaches for open walls in a cool climate are Early Victoria, Rivers's Early York, and Royal George.—C. M., near Leeds.

THE ORCHARD HOUSE IN 1872.

I HAVE been accustomed at the end of each season to make a few remarks, general and particular, on the culture of fruit trees in pots. Having done so for several years, it is a matter of some difficulty to say anything new on the subject, especially when you see no reason to change your method of culture. In a properly-constructed and efficiently-heated orchard house you can, if you do not cram it full of bedding and other miscellaneous collections of plants, bid defiance to the weather, and be the spring frosts late or early, be the summer genial or uncongenial, one can invariably obtain a crop of good fruit.

Whatever I may write about the advantages of this method of culture under certain circumstances, I do not wish the readers of this paper to assume that pot-culture is invariably the best. One advantage, and that not a

small one, is that a large variety of fruit can be grown in one house. Those who have annually fruited, say, from thirty to forty different sorts of Peaches and Nectarines will have observed that different seasons have a marked influence on each variety. A Peach may be of excellent quality one season and of indifferent flavour the next. I can give an instance of this in the Lord Palmerston Peach. Last year the fruit was dry, tough, and much wanting in flavour; this year the "cling" is scarcely apparent, and the fruit is now juicy and good. The Salway Peach is sometimes the best late variety we have, another season the fruit is "woolly" and juiceless. These remarks do not apply to our best standard Peaches, such as Early York, Royal George, Grosse Mignonne, Bellegarde, Barrington, and Princess of Wales—these are invariably good. It is in the earliest and latest sorts that this inconstancy prevails; still, we do not like to do away with such fruits as Exquisite, Lord Palmerston, &c., merely because they are not equally good every season. Lady Palmerston is a most valuable Peach, it ripens midway between Desse Tardive and Salway; it is a yellow-fleshed sort, and has always been good and, withal, one of the best setters we have; it is now (September 17th) coming in, and three trees of it in pots are loaded with fruit—not large this season, as the trees have been overcropped. It is of no use trying to get quantity and quality from the same tree. Our largest fruits this season have been Desse Tardive and Lord Palmerston, one of the largest fruit weighed 9½ ozs. Desse Tardive is not so much grown as it ought to be. I think it is a far superior Peach to Barrington; it is rather later, and sets more freely. Mr. Foster, gardener to E. Ind, Esq., of Warley, exhibited a splendid dish of it at the Romford autumn exhibition. I wish he would tell the readers of this Journal how he manages to grow such fine fruit, some of which must have been a foot in circumference.

If some sorts of Peaches are not to be depended upon, the same fault is to be found amongst the Nectarines. I will name some that are invariably good—Pine Apple, Elruge, Violette Hâtive, Balgovan, and Victoria. I fruited Lord Napier this season; it is an excellent early Nectarine, of large size, far superior in flavour to Hunt's Tawny, but fully eight days later.

A few details of culture may be summed-up in a few words. Although the house here is heated, I do not use the apparatus except when the trees are in blossom. At such a time this is necessary to ensure the setting of the fruit if the weather is unfavourable. Much care must be taken in watering the plants that may be in the house. The orchard house here accommodates three hundred pots of Strawberry plants, and I find the damp arising from watering them is injurious to the trees, and prevents the fruit from setting freely. During setting it is well to leave the ventilators open a little all night, especially if artificial heat is applied. In summer a sufficiently high temperature can be maintained by studying the ventilators. Should the weather prove cold and cloudy keep them rather close, occasional blinks of sunshine will then serve to keep up the thermometer.

It has been recommended by some to allow the trees to remain in the same pots several years in succession. I have tried this, and do not approve of it. I repot them once in two years. The best time to do this is immediately after the fruit has been gathered. Do not give them a large shift: from an 11-inch pot to a 13, or from a 13 to a 15-inch, is enough. When the tree is turned out of the pot, if it has done well the roots will be found thoroughly matted round the outside of the ball. An inch of the exhausted mould should be picked out all round with a pointed piece of iron, and all the crocks and some of the mould should then be cleared from the bottom. The tree is then ready to be repotted in a larger pot. Good turfy loam of a clayey nature four parts, and one part rotted manure, are the best potting material, and it should be rammed in quite firmly with a wooden rammer. This is the more necessary if the loam does not contain much clay.

Watering is perhaps the most important consideration in the culture of fruit trees in pots. An hour's neglect may destroy the work of twelve months. Indeed this is the most reasonable objection urged against the system. When the trees are in full growth they require watering at least twice a-day; this takes up a deal of time on week days and causes extra labour on Sundays, which ought to be avoided as much as possible. After the fruit is well set and the trees are growing freely it will not be easy to overwater them. Peach and Nectarine trees are very liable to be attacked by insect pests. Red spider can be destroyed or effectually held in check by frequent

syringing. Should black aphid appear on the shoots, much the best way to destroy it is to fumigate with tobacco smoke. This is better than washing the aphides off with tobacco water and soft soap. I commence to syringe the trees every fine morning as soon as the blossoms drop. When hot weather sets in, about the end of May, they will require syringing twice a-day. See that they are clear of all insect pests before the fruit shows signs of ripening, as after this time syringing must be discontinued; and should any red spider be about, it will then spread with amazing rapidity. I need not say anything about the advantage of growing the finer varieties of Pears and Plums in this way. We get them much earlier than we can from walls, and much superior in quality. If there is no room for both Pears and Plums, grow the former. A dish of orchard-house Pears, when the fruit is well grown (the trees, of course, ought not to be overcropped), will always be appreciated. The Pear requires much the same treatment as the Peach and Nectarine, but less syringing and a drier atmosphere.—J. DOUGLAS.

LAPAGERIA ROSEA IN SCOTLAND—SCALE ON CAMELLIAS.

As the *Lapageria rosea* is not often seen in this district (Linlithgow) flowering abundantly, I think it may interest some of your readers to know how this fine greenhouse climber displays itself under the arrangements which appear to be necessary to insure a free growth, and these may be said to be wholly confined to the proper planting. When once well rooted it only requires watering and tying-up. Some years since I bought a plant which lived on, as most potted plants of *Lapageria* appear to do, but the shoots were hard and small, and little progress was made. Not being satisfied with the slowness of its growth, I planted it out at the north end of a Camellia house, when it soon sent up a strong shoot, which unfortunately was stopped by the slugs. These pests are very fond of this plant, and the points of the Asparagus-like shoots were eaten-out, and the growth of the plant much retarded. After trying different means of stopping the ravages of the slugs, I found one mode of protection perfectly successful, and it is simple. I had a small zinc water-trough, 1½ inch wide and about the same depth, put round the plant, giving plenty of room for the new shoots to come up within it, and I have had no trouble with slugs since. The outer rim of the water-trough must be sunk 3 inches into the soil.

I found, from the roots of the *Lapageria* running into open drain-tile collars, which had been sunk near it, that it required a very open material to grow in, and having seen broken peat turves recommended, I had a large pit dug round the plant; I believe that a pit a yard square would not be too large. This pit was filled partly with stones laid very loosely, and broken flower-pots, the soil being thin turves of peat and loam torn into pieces as large as the hand. There is ample drainage from the pit, and this must be secured, as the plant will take with advantage very large supplies of water at the growing season.

The result of the above treatment has been that the plant now covers part of the north end of the house for a space of 30 feet by 8, and has while I write 326 fully-expanded flowers, as well as coming buds in proportion. It flowers, more or less, from the end of June to the end of December, each bloom lasting about a month. Of late years it has carried seed-pods, which hang all the winter on the plant, and are not ripe till the second summer.

The *Lapageria* gets no heat here, except what is necessary to keep out frost from the Camellias, for we never force them. Too much cannot be said in favour of this fine greenhouse climber.

The mention of Camellias above leads me to state that I have found an easy way of killing the scale, especially in autumn, when it is much on last year's young wood. I take a hair pencil the size of a small writing quill, dipped in common spirits of wine, and touch the scale on the leaf or twig. The effect is instant death to the scale, without the least damage to the most tender-growing leaf. I have also used the spirit to kill green fly on late-pushing shoots of the Camellia, and so little is required that a half-ounce bottle will keep a large collection clear of both pests for twelve months.—L.

SALE OF ORCHIDS.—Mr. J. C. Stevens sold by auction on the 19th ult. an importation of Orchids. The highest prices realised were for *Odontoglossum vexillarium* var. *giganteum*,

£8 8s.; *Masdevallia chimæra*, £7; *Epidendrum imperator*, £6 6s.; *Cattleya gigas*, £6 6s. There were 216 lots, and the total amount of the sale was about £500.

POTATO-GROWING IN LINCOLNSHIRE—CROPS FOR COMPENSATION.

In this county immense tracts of land are devoted to Potato-cultivation, and are grown on all kinds of lands, high and low, light and heavy. Various reasons are naturally adduced as a contributory cause of the murrain, such as a lack of potash in the soil, and what not; but we need not look far for the one great primary cause, which is excessive wet. The rainfall in this county, for instance, even now, exceeds considerably the general annual average fall. Taking the six Potato-growing months, March to August, both inclusive, the rainfall is 14.69 inches. This exceeds by 3.46 inches the amount registered during the same period of last year. This represents an excess of nearly 350 tons weight per acre, an amount of water which cannot but make itself felt for good or evil on other crops besides Potatoes. But, bear in mind, last summer was a wet one, and the Potato disease was far more extensive than in 1870. In the six Potato-growing months of the year last named the amount of rain was only 7.69 inches, or very nearly double the amount of the fall during the same period this year, which at the date of writing is, as before mentioned, 14.70 inches, equivalent in the one period in round numbers to 172,900 gallons per acre, and in the other to 333,680. The crop of 1870 was good, which goes to prove that about 173,000 gallons of water per acre is sufficient for its maturation; but this year we have 160,000 gallons per acre excess, and it is this excess which has ruined the crop, and not any sudden deficiency of mineral or superabundance of animal manures, as is commonly asserted. It is only varieties of extraordinary vigour and constitution that can build up a structure of leaves to deal with, elaborate, and purify an excess of moisture to such an extent as this. The foliage is overworked, the crude sap is unpurified, and disease ensues.

Potatoes in this county are quite as bad on the high as on the low lands. On fine hazel loam which has been specially and intelligently prepared for the crop, the Potatoes are as bad as on land prepared in a routine hap-hazard way. The kinds, and the only kinds which have escaped the best, are those with stout upstanding stems. I observe particularly that the sorts with weak prostrate stems are the most extensively diseased. I have seen such, as Regents, worthless on fine limestone land, while on low fen land I have seen upright-growing varieties comparatively free from disease. This is, no doubt, the direct result of the drying action of the air acting on the surface of the ground and taking up a portion of the superabundant moisture, which could not be the case with prostrate-growing sorts, which, by their habit, prevent surface-evaporation almost entirely. A Potato grown in this district, called the London Red, is comparatively free. The Red-skinned Flourball and Victorias are much less affected than Regents and Rocks. The latter are of creeping habit, the former upright.

A few years ago a curious man, now living in this place, had some Potatoes growing in deep wet soil. The haulm was of an extraordinary length, in some cases exceeding 8 feet. He took it into his head to get some tall sticks and tie a lot of the haulm straight up. It was a curious sight, but very interesting at digging time, to see far more than double the quantity and of double the quality turn out from the tied-up roots as compared with those left to smother the ground and each other in the natural way. This fact, which I myself verified, points to upright-growing varieties as the most certain to escape disease, and next to this, giving plenty of room at planting time between the roots and rows.

In one village of this county, that of R. Winn, Esq., M.P., it is common to see in many gardens every root of Potatoes occupying a separate hillock. They are planted just a yard apart, and each root dug round and earthed. I have seen them growing, but not dug up, but am told the crops are always fine and disease rare. If this meets the eye of Mr. Montgomery, or that of the excellent rector Mr. Cross, they will, perhaps, favour us with practical and accurate information on this system.

It is not much use philosophising on the cause and working of the Potato murrain, unless something practical and useful can be elicited therefrom, or some substitute suggested to

aid in tiding over the national loss. I have endeavoured to do the one, and will now briefly glance at the other. I endeavoured in the spring of the year to press on the inhabitants of this district the importance of a freer cultivation of Parsnips. These are nutritious, profitable, and serviceable, but a bed to every square mile is about all one sees. It is a great mistake. How useful a supply would be during the approaching winter! But it is too late to provide Parsnips now, and it is also too late to plant winter Greens, but it is not too late to plant Cabbages. My advice is, Plant them freely. I am aware that many clergymen will scan over these notes, and I am also aware that there is no body of men more desirous of doing good in every way to those by whom they are surrounded. I would, then, humbly submit to the clergy as matter for their consideration the desirability of urging on all in their charge to plant double the quantity of Cabbages in their gardens. If in the spring bread is dear, and it will be if the Potatoes are done, as they may be, then a plot of Cabbages will be a little mine of wealth to many a humble dwelling. We cannot help the dearthness of bread or the scarcity of Potatoes, but we may hope, if we only try, to have a useful substitute in Cabbages.

But how about the land—the after-cropping? If plants are planted a foot apart, and every alternate one taken out early and used as Greens, and the rest left to form Cabbages, the whole crop will be off in time for Celery, late Peas, or Strawberries. But these are not everybody's desire; and another plan would be to plant Cabbages quite 3 feet apart in the rows, till the ground well between the rows, and plant with Potatoes. The removal of the Cabbages would give room for the Potatoes, and as good, and perhaps a better crop, would be the result than by the narrow 2-feet planting still common, and have the Cabbages into the bargain. There is, assuredly, a hard time ahead for many families, and every aid that can be given is necessary. If each would do the little good he could in his day and generation, might not the world be made better and the people more home-loving, loyal, and contented?—J. W., *Lincoln*.

ELECTION OF STRAWBERRIES.

I SHALL be glad to undertake an election of Strawberries if growers will send me their lists, giving in each case the nature of their soils; but as I am not so well acquainted with the names of the most successful Strawberry growers and judges, as I am with Rose growers, I do not know who to write to, so wish growers to send me their lists of their own accord. I shall be glad to be returning officer again for Roses, or leave it to Mr. J. Hinton, just as he may prefer. I should suggest to increase the number to fifty, but each person naming in the fifty those he considered as the twelve best, and have an independent list of twelve Teas and Noisettes. I had several extra lists sent me last year after the poll was closed, but it did not make any material difference, I found, in the names or position of those elected.—C. P. PEACH, *Appleton-le-Street, Malton, Yorkshire*.

POTATOES SLUG-EATEN.

My experience of Potatoes is the same as that of your correspondent "T. S. C"—hardly any disease at all, and Suttons' Flourball quite untouched with it, though others near it had it slightly. Numbers of the largest tubers of the Flourball, however, are riddled with a grub, or rather not a grub at all, but a slug. I caught several in the act of eating. It is a peculiar slug, from half an inch to 1 inch in length, of a black colour, bluish-black in fact, and the under part of a deep orange yellow, and particularly sluggish in its movements, but not at all slimy. By the way, Suttons' Flourball is only fit for pigs. I have tried it at all times of the year, and instead of turning out a flourball, it is generally waxy, of a sweet unpleasant earthy taste. I mean to give up growing it. Numbers of people about here are doing the same.—J. R. N., *Calne*.

HORNED RYE.—Rye is subject to a peculiar disease, which distorts its natural form and gives it a horned appearance: hence it is called "Horned Rye." Bread made from grain in this condition is extremely deleterious. In 1596 an epidemic prevailed in Hesse due to the use of bread made from Rye in this diseased state. Of those who ate of it some were seized with epilepsy, others went mad, and few ever completely recovered their original faculties. In 1648 and 1739 misfortunes

arising from the same cause took place on the Continent. In 1709 another instance occurred in France. When taken into the hospital the patients showed all the signs of hopeless drunkenness, and after this their toes mortified and fell off. In some cases the decay proceeded towards the trunk, so that the limbs had to be amputated.—(*Rhind's Vegetable Kingdom.*)

RED BEET FOR DECORATIVE PURPOSES.

IN some situations and arrangements it has been used with good effect as a bedding plant, and it is not less effective when used for the purpose I am about to mention. As a receptacle for bulbs, such as Hyacinths, &c., it is what we might term a living basket, which forms a very curious and interesting object to hang in the conservatory or plant house during the spring months. This being the usual time at which preparations are being made for the bulb season, the hint may induce some to try the experiment; not that I mean to say it is anything novel, but if successful it cannot fail to please. Select a few well-matured moderate-sized Beetroots, being careful not to injure the crowns; cut a few inches from the bottom end, leaving, say, a little more than one-half; then hollow this bottom end out, leaving just room enough for a little compost or silver sand, and one bulb of a Hyacinth; but do not scoop out more than is needful, that as much nourishment as possible may be left for the crown. To prevent the bulb falling out, place a little green moss close around it, and fasten the whole with some small wire. A handle to this Beet-basket, by which to suspend it, can easily be formed by twining a piece of galvanised wire, fastening the ends in the opposite sides of the Beet. This will also answer as a support for the flower-spike. It will require to be kept constantly moist to induce the Beetroot to send leaves freely from the crown, which faces downwards. The result of this is that the foliage twines gracefully round the sides in an upright direction, shrouding everything from view, the dark leaves being intermixed with the inflorescence of the Hyacinth, which by that time will be in its perfection. The effect is exceedingly pretty.—C. J. WHITE, *The Gardens, Ferniehurst.*

NOTES OF A WANDERER.—No. 3.

CHAMONIX TO PARIS.

A THUNDERSTORM in the neighbourhood of Mont Blanc, however grand it is—and no one can dispute its grandeur—is oftentimes the prelude to wet weather, and I was therefore somewhat gratified to think that, although we lost the fine view of the great mountain from Sallanches, we had the thunderstorm as we were returning on our homeward journey; in fact we heard that the week after we left, our friends had been kept in-doors for nearly a week, this day being the only wet one we had during our trip. Hence, on arriving at Geneva, I could not explore it in order to see if there were any horticultural matters worth noting, and had to hasten over to Neuchâtel, whence on the following morning we started by Pontarlier and Dôle. Much has been said of the beauty of this route, and doubtless it is very beautiful, but I hardly think it equal to that from Geneva to Culoz; both routes run through the chain of the Jura. But the route to Lyons is grander. You have for a time the rushing waters of the Rhone, and the passes themselves are grander. Those who know the railroad route from Derby to Manchester through the Peak district, can form a good idea of these routes if they will regard the English as but a miniature of the Swiss scenery. We halted for the night, or rather until early morning (leaving again about half-past two), at Dijon, and took the opportunity of paying a visit to M. Henri Jacotot, in whose nursery the famous old Rose Gloire de Dijon was raised, a Rose to which, take it all in all, we have not an equal; so that if I could only grow one Rose this would be that which I should select.

Dijon itself, the old capital of Burgundy, is well worth a visit. It is a thoroughly French town with its cafés, public gardens, and quaint old houses; and after the mongrel sort of table d'hôtes one gets in Switzerland now-a-days, it was a pleasure to sit down at the Hotel de Jura to a regular old-fashioned French one, where the fare was ample and the cookery good, and where mine host himself did the honours; it was pleasant in the evening to drive round the city, visit the old churches, and witness the enjoyment of the people in their public garden; pleasanter still to pay a visit to Jacotot and enjoy a chat with him. He told me that Gloire de Dijon came up by chance in a bed of seedlings, that he had no idea of its

parentage, and was very much astonished himself to find its excellence, as he had sowed seed of Hybrid Perpetuals; and it is somewhat curious that no other Rose has emanated from the establishment which is worth cultivating. The home nursery is not a large one, but contains amongst other things a nice collection of Begonias, which form a *spécialité* of M. Jacotot; and also Delphiniums of several excellent kinds, amongst which we would note Madame Henri Jacotot, having been raised here.

It was not pleasant to be aroused about two o'clock and to get down to the railway station and take one's seat for Fontainebleau; it was, however, especially enjoyable to get to the latter place and have a comfortable chat with good Monsieur Souchet and his admirable wife. I was glad to find him somewhat better than at my last visit, but withal he is a constant sufferer. I have seen for the first time the effects of the terrible frost of last winter. The Rhododendrons which had been planted with such care were cut to the ground; all round the neighbourhood the Vines which supply the famous Chasselas de Fontainebleau to the Paris markets were killed to the ground, so that the supply must fall very short. As I have before stated, M. Souchet's chief growth of Gladiolus is not here, but at Montereau; and as it was too early in the season to see any in flower, I have nothing to communicate respecting this grand flower. He has some good flowers to come out this season, and I think I may say that the set sent out last autumn contained some of the best flowers he has as yet raised, so that we may hope for some fine flowers still.

And what have I to say about Paris? We could not remain long here, as I was due at home; but what I did see impressed me with the feeling that I did not consider that the Parisians preferred the Empire to the Republic. Although not relapsing into the Paris of fifty years ago, it was no longer the Paris of the second Empire, bright, gay, clean, and prosperous. *Affiches* fixed on the walls of all the public buildings; windows broken and blinds torn in the Louvre and Tuilleries; dirty unkempt-looking men and women lolling out of the windows; cheap Jack shops occupying the places where splendid *magazins* would have been in the new thoroughfares; and although nothing can ever deprive the city of its marvellous beauty, yet one could not help saying, "Thou art no more what thou hast been." The gardens are assuming somewhat of their old appearance; but one can see that economy has had to be studied, and cheaper plants have taken the place of the fine plants of former days: but what can one expect after the desolations of a foreign and civil war? One thing I am glad to be able to say—that the gifts of seed and Potatoes have proved a great boon, and caused the name of England to be held in grateful remembrance. And so ended a pleasant run, the like of which I am not likely to have for many a long day.—D., *Deal.*

SOME PREDATORY INSECTS OF OUR GARDENS.—No. 36.

THOUGH my thanks are tardily rendered through an oversight, I gladly offer them now to Mr. J. J. Weir for his interesting note, elicited by observations of mine upon certain caterpillars. I cannot set my experience against his as to the "natural selection" shown by the caterpillar-destroying birds, for, in truth, being somewhat short-sighted, I can rarely approach near enough to birds thus engaged on the hedges or elsewhere to ascertain what they are picking up. Of course, I might make researches by the aid of a telescope, yet this is not always a convenient companion on a walking excursion! But I am quite willing to accept Mr. Weir's conclusions as based upon facts he has noticed, though, perhaps, we are hardly justified in assuming that birds universally neglect bright-coloured larvæ. I have seen a bird carry off a larva of *Sphinx ligustri*, a conspicuous species; and, moreover, it is unquestionably true that birds do seize gaily-plumaged moths, as, for instance, *Zeuzera æsculi* and *Aretia caxa*.

At this season we find various larvæ of the Noctua family feeding freely in the kitchen garden, and intruding themselves occasionally amongst the flower-beds, or here and there disfiguring a shrub. From no list of predatory insects should the Dot Moth (*Mamestra persicariæ*), be excluded or omitted, yet I find no record of it in most of the books upon horticulture which profess to give also an enumeration of the gardener's enemies. This larva feeds on a great variety of plants. Mr. Newman has pointed out that it is specially found on the Elder, which may be its primary food. I have also frequently seen it on the Syringa, but it generally prefers low-growing

plants in gardens. It occurs occasionally upon the hedgerows in the south of London, as I have observed, yet seems to have a preference for plants under cultivation. The moth is very handsome when seen ere it has taken its flight after emergence from the pupa, having then a glossy appearance which excursions on the wing ere long efface. The fore wings are a very deep brown, in some individuals looking almost black, while others again show more of a chestnut hue. The name "Dot" has been given to it from the conspicuous character of what is known as the reniform spot; this is of a brilliant white, with a slight cloud at its centre. The hind wings are much paler, and the thorax is highly crested. These moths are out in June, July, and even in August, when the caterpillars which have emerged from the first batches of eggs are to be found also.

Like the moth, the caterpillar is variable in its colour, and the duller-tinted individuals are said usually to produce males, while the brighter specimens develop into females, this being, of course, quite as it should be! In some things the Dot caterpillar reminds us of those belonging to the Sphinx group; the body is smooth and tapers towards the head, which is small and shining, and on the twelfth segment there is a conspicuous hump. Behind the head is a curious dark patch, notable for its regular shape, as it is squared-off by a white line on each side, and very exactly divided into two parts by a line of the same colour. Along the back runs a series of stripes, or "V-shaped markings," which meet on the sides another set of markings which rise from the claspers, but are bent in an opposite direction. The ground colour, as already observed, is various shades of green and brown. When the caterpillar of *M. Persicariæ* is at rest, it will sit on a twig in a peculiar attitude, with the head and legs thrown up, and, if disturbed when feeding, its first movement is generally to place itself in that position; but if the alarm continues, then it rapidly drops, and, following the advice given by boys to each other when engaged at the game of leap-frog, it "tucks-in its head," and falls to the ground rolled in a ring, sometimes still keeping-up its attachment to the plant on which it was feeding by means of a silken thread, which has considerable strength and elasticity. The adult caterpillar enters the earth and reposes there in the pupa state through the winter.

Mr. Lockyer, who has had the species particularly under his observation in the present and past year, has reported some interesting facts concerning it to the "Entomologist." In 1871 the larvæ were very abundant near Camden Town, and in other districts north of London. Speaking of one field, Mr. Lockyer observes, "They swarm on almost all the plants, but especially on Burdock (*Chenopodium*), and another plant which, I think, is *Atriplex*. They are also very common in our own garden; off one Gooseberry bush I took above three dozen full-fed ones. Every evening that I have searched for them I have taken them in numbers varying from twelve to sixty. I notice that all those on the Gooseberry, the leaves of which are turning brown, are of the brown variety; whilst those on a Hollyhock close to it were nearly all green. All my entomological friends about here have taken the larvæ in greater or less abundance." Mr. Lockyer proceeds to state that it appeared to him their plentifulness in the field referred to, was due to the fact that most of the gardens adjacent had Lime trees in them, about the flowers of which the imagoes hover in quest of honey, and hence they would be led to deposit eggs not far off. I have myself noticed that the moth is fond of sweets, and it resorts eagerly to sugar spread upon tree trunks. Writing again last August, Mr. Lockyer states that he has found the caterpillars abundant on Mint this year, but they are not usually noticed by day, as they then rest under the leaves. It is probable he is right in his conjecture, that naturally the larvæ feed mostly at night. Of the full-grown larvæ taken many were ichneumonated.

The caterpillar of the common Cabbage Moth (*Mamestra Brassicæ*), helps in some small degree to supply aliment to our tables, since, by way of unconscious retaliation for the damage it does in our gardens, we occasionally cook it and send it to table; and the habits of the creature, indeed, expose it to be devoured by that omnivorous glutton man, since it lurks at times in the hearts of Cabbages, and skulks on the partly-folded leaves of other culinary plants. Some persons do not mind eating caterpillars, or swallowing the essence of them. I remember when but a youngster witnessing the operation of shelling Peas, and on mildly objecting to the maggots which I saw dropping into the dish, it was in answer asserted that "whatever fed upon Peas must taste of Peas." The logic even to a juvenile mind was not good. Sheep and oxen feed

on grass, and pigs upon very various diet, yet their flesh does not taste thereof. But if any one is at all inclined to adopt this theory, I should like him to bite an earwig in half as he is eating some fruit, and he will at once renounce the general principle. Seriously, however, it is quite true that the juices of the majority of caterpillars have little taste, which is fortunate, since those who have most to do with cutting and preparing vegetables for the table do not investigate leaves, stalks, and roots as an entomologist might. In my opinion all cooks ought to receive some lessons in entomology, thus they would not only be made more careful in rejecting caterpillars and other insects, but they might also add something to our stock of information.



Mamestra Brassicæ.

There appears to be a succession of emergences of the moths, and, consequently, the larvæ of *M. Brassicæ* are to be seen about at various times during the summer season. These are variable in colour and markings; the body is smooth and velvety, along the back there is usually an indistinct series of triangular blotches, and enclosed in each are two white dots; the upper surface of the body is some shade of brown or dull green, and beneath it is generally dingy yellow, the legs being of the same hue. In fields and waste places the caterpillar of *M. Brassicæ* feeds on the species of *Chenopodium* and *Rumex* and their allies; in gardens none of the Cabbage tribe come amiss to it. At one time the caterpillars are to be found burrowing into the "hearts" of Cabbages, and secreted in the "heads" of Cauliflowers; at another time they will be seen feeding exposed upon the leaves. Common by day, they are still more numerous at night if searched for with a lantern. Nor does the species limit itself to culinary vegetables; Dahlias, Geraniums, Marigolds, and, in fact, too many plants to enumerate, yield food in turn to the caterpillar, and it is in a great measure through this fact that the insect does not make its attacks specially upon any one plant, that its injurious effects are less marked. As far as my observations extend, this moth is not subject to those notable fluctuations we find in the economy of some of our garden enemies; there is a certain number every year, but this rarely exceeds an average in a district, though in one garden it may chance to be more abundant than in another. As the females deposit a good proportion of eggs, its multiplication must be checked by some means; and as it does not seem to be at all a sickly larva (as some are), its destruction is principally to be attributed to parasitic enemies and birds, which devour many of the larvæ at all ages, and poultry even eat the pupa or chrysalis, as Mr. Newman points out. "During the autumnal and winter garden-digging the chrysalids are turned up by hundreds, and might then be readily collected. They are a favourite food of all kinds of poultry; fowls, guineafowls, peafowls, and pheasants devour them with avidity." Killing the chrysalids is highly advantageous, whether it be done by human agency or not. The caterpillars can only be got rid of by hand-picking; they cannot be destroyed, except in rare cases, upon the plants they haunt. The moths may also be swept into a net when engaged in egg-laying at the dusk of evening.

The moth known as the White Colon (*Mamestra albicolor*) should be mentioned here as a congener of the last-named, and a species occasionally occurring in gardens, but not at all abundant as a rule. Its food in the open country is the species of *Chenopodium* and *Atriplex*, in gardens it resorts chiefly to Cabbages and Lettuces. The markings disposed upon the dark brown wings of the perfect insect are much more distinct than in *M. Brassicæ*, and deeper than the ground colour, except along the hind margin, where there is a row of dull white spots. The peculiar mark which gives the name is situated in the reniform spot on the fore wings, being similar to the double dot, or colon, and white. This moth emerges in May or June, and the caterpillar feeds up rather early in the summer. This is also rather unlike the caterpillar of *M. Brassicæ*, having a crescent-shaped mark behind the head, and a dark

stripe down the back a little darker than the ground colour, which is green, or greenish brown. Along the sides of the body are two paler stripes. The species does not appear to occur in the London district, nor in the south-eastern and midland counties. It is reported from Devonshire, Somersetshire, and certain districts in the north of England, and it occurs plentifully near Dublin. *M. albicolor* has a partiality for localities near the sea, and, perhaps, has an occasional taste of salt water, though it would hardly attempt to cross the ocean with only the aid of its own wings.—J. R. S. C.

ROYAL HORTICULTURAL SOCIETY.

OCTOBER 2ND.

THE collections of edible and poisonous Fungi were the principal feature on this occasion, but there was in addition a very good show of Grapes and Potatoes, besides the subjects submitted to the Committees, which were of considerable interest.

The prizes offered by W. Wilson Saunders, Esq., for the best and second best collections of edible and poisonous Fungi were awarded to Mr. English, of Epping, and Mr. Austen, of 107, Oxford Road, Reading, who had each very interesting collections; as also had Mr. W. G. Smith, North Grove West, Mildmay Park. Perhaps the most remarkable of the edible kinds exhibited was *Sparassis crispa*, which might easily be mistaken for a sponge. The resemblance was perfect in the specimen from Mr. Smith, who considers it to be the most delicious of Fungi. Mr. Austen, however, exhibited a larger example, but the similitude to a sponge was not so strong. Among other edible kinds the Horse Mushroom, *Hydnum repandum*, *Cantharellus cibarius*, *Marasmius oreades*, *Lactarius deliciosus*, *Boletus edulis*, and the majority of the species exhibited in former years again appeared. For the best collection of edible Fungi the positions of the exhibitors were reversed, Mr. Austen being first and Mr. English second. Mr. Smith had also a very good collection of a dozen species, also one of Fungi of botanical interest but doubtful properties.

Prizes were offered for the best and second best collections of Black Grapes. Messrs. Lane, of Great Berkhamsted, were first with fifteen bunches, many of them of very good size. The second prize went to Mr. E. Morris, gardener to H. F. Salmon, Esq., Gayton House, Northampton, for good bunches of Black Hamburg, Mrs. Pince, and Lady Downe's, together with Black Prince. For the best collection of White Grapes Messrs. Lane had a first prize for splendid bunches of Muscat of Alexandria, and very good examples of Buckland Sweetwater, Foster's White Seedling, Trebbiano, and Duchess of Buccleuch. There was no other exhibitor.

For a single bunch of Black Grapes no first prize was awarded, and the second went to Mr. Morris for a large bunch of Black Hamburg, but not coloured, and much rubbed. The best dish of White Grapes was Muscat of Alexandria, large and beautifully ripened, shown by Messrs. Lane; the second best, an excellent bunch of the same kind shown by Mr. Cole, gardener to J. S. Budgett, Esq., Ealing Park. From Mr. Morris came a large bunch of Foster's White Seedling.

Messrs. Carter & Co. offered prizes for the best three dishes of round Potatoes and the best three dishes of kidneys, to include Carter's Ashtop Fluke. Mr. Fenn, Woodstock Rectory, Oxon, was first with excellent clean-grown tubers of Fenn's Early Market, Cricket Ball (second early), and Rector of Woodstock (second early), round kinds; and of kidneys, Fenn's Woodstock Kidney, Bountiful, and Carter's Ashtop Fluke. Mr. Miller, gardener to F. T. Friend, Esq., Northdown, Margate, was second. Mr. Fenn likewise exhibited a collection of seedlings of 1872, for which he had an extra prize.

FRUIT COMMITTEE.—G. E. Blenkins, Esq., in the chair. Mr. Richard Dean, of Ealing, sent a Cauliflower called Early Snowball, which the Committee decided should be seen again before giving an opinion upon it. Mr. Dean also sent specimens of Californian Mammoth Radish. Mr. Jones, of the Royal Gardens, Frogmore, sent a brace of Hedor Cucumber. Mr. W. Cole, gardener, Ealing Park, sent fruit of Hepper's Improved Goliath Tomato, a large and handsome variety, to which a cultural commendation was awarded. Messrs. James Veitch and Sons sent plants of thirteen varieties of Endive, to which a cultural commendation was awarded. Mr. Robert Fenn sent twenty-one varieties of Potatoes, mostly varieties of his own raising, which also received a cultural commendation.

Mr. Jones, of the Royal Gardens, Frogmore, sent four splendid fruit of Smooth-leaved Cayenne Pines, to which a cultural commendation was awarded. Mr. Wells, of Southend, sent a basket of 16 lbs. of Black Hamburg Grapes ripened in a groundinery, remarkably well grown, well coloured, and of excellent flavour. These were much admired, and received a cultural commendation. Mr. Barron sent from the Garden at Chiswick bunches of Madresfield Court, Alicante and Black Hamburg Grapes grown

in Mr. Fountaine's orchard house without any artificial heat. These were perfectly ripe, but the Madresfield had not the trace of Muscat belonging to it, the Alicante was tasteless, and the Black Hamburg was sweet. A cultural commendation was awarded. A seedling Pear raised at Frogmore and called Golden Queen was sent by Mr. Jones. It is a small handsome-looking variety, with a pale golden-coloured skin and a high aroma. The flavour was sweet and with a high perfume, but the Committee did not consider it of sufficient merit to award it a certificate. Mr. R. Fenn, of Woodstock, sent two samples of fruit of Ribston Pippin, one from a tree upon its own roots, and another from a tree grafted on the Blenheim Pippin. Those from the Blenheim were large and well grown, possessing all the markings of the Ribston, but the texture of the flesh and flavour were similar to the Blenheim, while those from the tree on its own roots were small with tough flesh and inferior flavour.

Mr. Morall, gardener to T. B. Horsfall, Esq., Bellamore, Rugeley, sent a seedling Melon called Bellamore Hybrid, which was too much ripe. Mr. James, Redlees, Isleworth, sent two seedlings, neither of which was approved by the Committee.

The Committee then proceeded to examine the home-made wines of Mr. R. Fenn:—

Gooseberry, made from green prize Gooseberries; slightly sparkling, acid, and plain.

Gooseberry and Rhubarb mixed. A fuller body than the Gooseberry, and more flavour.

Esperione. This is made from the Esperione Grape, and is a sparkling red wine, the growth of 1870; it is an excellent wine.

Muscadine and Muscat of Alexandria, made in 1870. This is a dry white wine, with an acidulous flavour and an agreeable aroma.

Muscat of Alexandria and Muscadine, coloured by the Esperione; a thin dry wine.

Royal Muscadine and Esperione. A clean still dry wine, which Mr. Fenn intends should be drunk with fish.

The Committee considered the Esperione of 1870 the best, and the last the second best.

FLORAL COMMITTEE.—W. Marshall, Esq., in the chair. From Messrs. Veitch, Chelsea, came three of their fine varieties of Hippeastrum—namely, Pardinum, Pardinum superbum, and Leopoldi. Mr. Green, gardener to W. Wilson Saunders, Esq., Hillfield, Reigate, sent a very fine specimen of Sedum spectabile grown in a border of peat soil under the shade of trees, also *Tapistra nutans* in fruit, this being produced close to the base of the leaves. From Messrs. E. G. Henderson, Wellington Nursery, St. John's Wood, came *Crocus Pallasii*, syn. *Crocus autumnalis*, with fine blue flowers, *Sternbergia lutea*, and *Colchicum autumnale albiflorum plena*, with large double white flowers, three very ornamental autumn-blooming plants. A first-class certificate was given to the *Colchicum*. Mr. Grieve, Culford Hall Gardens, again exhibited his bronze Ivy-leaved Pelargonium Dolly Varden. From Messrs. Standish & Co., Ascot, came *Thuja americana aurea* and *Biota orientalis ascoti*, ensis, two beautiful golden-variegated Abor-Vites; also a number of seedlings raised from *Berberis stenophylla* (a hybrid between *B. empetrifolia* and *B. Darwinii*), exhibiting a wonderful diversity in the form and character of the foliage, which in some of the plants closely resembled that of *B. Darwinii*, in others *B. stenophylla*, with many intermediate forms. Mr. W. Ingram, gardener to the Duke of Rutland, Belvoir Castle, exhibited a hybrid between *Pachyphiton bracteatum* and *Echeveria secunda glauca*, forming pretty glaucous rosettes. Mr. A. Parsons, gardener to W. Blake, Esq., Danesbury, sent a variety of *Asplenium Adiantum-nigrum*, which was named *Serpentini*, and received a first-class certificate. An extra prize was awarded to Messrs. Standish for two fine baskets of *Bouvardia Virelandii*.

From Mr. J. Hodgson, Plumstead, came *Tricolor Pelargonium Circassian Beauty*, the plants apparently of compact habit, the leaves small, and well coloured. Mr. G. Barnett, nurseryman, New Wimbledon, sent six pots of *Mignonette*, exceedingly well grown. An extra prize was awarded for these. Messrs. Carter and Co., High Holborn, exhibited *Philodendron Lindenianum* with handsome velvety leaves; *Echeveria scaphylla*, a hybrid between *E. agavoides* and *E. linguifolia*, of a peculiar dark green, and which has before had a certificate; *Cyclamen cilicicum*, a small kind from Asia Minor; and *Salvia compacta alba*. Mr. W. Bull, Chelsea, sent *Helminthostachys verticillata*, with yellowish-green verticillate fronds near the top of the stem, a handsome plant from the East Indies; *Encarpus dealbatus*, a handsome Palm with the under sides of the fronds silvery; *Dracena gloriosa*, with large, handsome, dark green leaves, banded with bronzy red; *Macrozamia pulchra*, a very handsome Palm; and *Colax jugosus*, a pretty little Orchid with white sepals, the two side petals spotted with dark brown, and the lip dotted and veined with bluish purple. To each of the above, except the last, a first-class certificate was awarded—to the first on account of its botanical interest. Mr. Jordan, gardener to J. Boustead, Esq., Wimbledon, sent a handsome plant of a *Gymnogramma* called *Bousteadiana*, stated to be a hybrid between *G. Lauchiana* and *G. chrysophylla*, but closely resembling the latter. From

the Society's garden at Chiswick came a splendid Begonia, one of Major Trevor Clarke's hybrids, with large bright rose flowers. The Committee deferred passing an opinion on it till it had been compared with other kinds. *Anchusa capensis*, with splendid dark blue Forget-me-not-like flowers, with a white eye, also from Chiswick, had a first-class certificate. Mr. Wills, nurseryman, Old Brompton, sent several varieties of *Scelopendrium vulgare*. From Mr. Wright, gardener to Rev. C. Roe, Bury St. Edmunds, came a stand of seedling Dahlias; from Mr. Wilson, gardener to W. Marshall, Esq., Enfield, a variety of *Asplenium nidus*, named *ramosum*, with the fronds forked at the extremities. Mr. R. Dean, seedsman, sent a form of Dwarf French Marigold, with fine crimson and yellow heads, and an excellent orange yellow one called *Aurea Floribunda*.

ECONOMICALLY DIVIDING A PIT.—In a pit or frame with several lights rather tender plants are placed at one end under one light, and that light is covered over for security, but the other lights are left uncovered. The tender plants thus receive little benefit from the covering, as the air in the whole space would soon equalise itself in temperature. The easiest remedy is to shut in that single light from the others by a thin moveable wooden partition. I often make a single or folded mat answer the same purpose. In a small pit or frame we can thus easily give a distinct temperature and condition to each separate light—nay, it is easy to give distinct conditions to plants growing in one light of a pit or frame. For instance: I make a slight hotbed under one light, place a division separating that from the other lights; one part we can devote to cuttings of tender plants that need more heat and a closer warmer atmosphere, by placing them in a small wooden box, say 18 inches square, with a square of glass in a slight frame to lay over it, and in the other part we may have small plants that need hardening-off with more air than would suit the cuttings that have yet to make roots.—R. F.

BEDDING ARRANGEMENTS IN BATTERSEA PARK.

On September 17th I paid a visit to this park for the purpose of taking notes on the principal bedding features. The sub-tropical department being the most desirable portion to inspect, I entered by the broad walk leading from the refreshment-room, near Battersea pier; and coming to the gate which divides the sub-tropical from the more recreative portion of the park, the first thing that meets the eye is a group of circular beds on both sides, planted alike with mixtures of Cannas, striped Maize, and *Yucca aloifolia variegata*, associated with the graceful and very ornamental-foliaged plant *Sonchus laciniatus*, margined with Golden Thyme, *Mesembryanthemum blandum*, and *Sempervivum tectorum*. Turning to the right, on the left-hand side is a group of plants in pots plunged to the rim of *Dracena fragrans*, variegated *Yuccas*, *Seafortias*, and *Monstera deliciosa*, interspersed with small groups of a neat variegated Ivy. Next, on the same side, is a bank of the lovely *Hibiscus rosa-sinensis*, with an undergrowth of *Abutilon Thompsoni*, edged with Scarlet Geraniums and *Centaurea gymnocarpa*. On the opposite side is a sort of recess, in which are to be seen numbers of *Wigandias*, *Aralia papyrifera*, *Ficus elastica*, and Palms, all thriving luxuriantly. Next, on the level turf, is to be seen a very pleasing arrangement; in the centre of the bed is a group of dwarf plants of *Cordylina australis*, the two ends *Dracena Rumphii* and *Tradescantia discolor*. The pattern is worked out with Golden Pyrethrum, *Alternanthera amœna*, Sedums, and *Echeverias*. It is a first-rate bed, and has a fine appearance. There is an oval-shaped bed with some large plants of *Amaranthus salicifolius*, most of which do not appear to have done well, but those that have attained perfection in colour are such as the Messrs. Veitch have in their nursery; it is a truly grand object for a bed. The other occupants of this bed call for no remark; it ought to have been a pretty bed.

Passing some other beds, Cannas, Aralias, Maize, &c., we come upon what I consider is one of the most telling beds in the garden. It is a round bed, and has a centre of *Canna Prémices de Nice* and *Madame Schmidt*, tall variegated Maize, *Abutilon Thompsoni*, a band of *Pelargonium Rosslyn*, and an edging of *Fuchsia Meteor*. This *Fuchsia* is so well adapted for edging purposes that I shall expect to see it largely used another season. Next to this is a circular bed, the centre *Coleus Verschaffelti* margined with *Centaurea candidissima*; next a band of *Alternanthera paronychioides major*, surrounded by a groundwork of Golden Feather, panelled with *Alternanthera*

amœna; the whole margin is *Echeveria pumila*, a pointed-leaved distinct form from the others in use.

We come now to a very pleasing foliage-bed of *Acacia lophantha* and *Grevillea robusta*, with an undergrowth of *Vitis heterophylla*, banded by the golden *Lonicera*, *Alternanthera magnifica*, and *Echeveria*. Passing by some foliage-beds of less note where fine plants of *Musa Ensete*, *Wigandias*, and *Eucalyptus globulus* are thriving as if in the genial temperature of a hothouse, we come to a round bed, the centre being *Centaurea candidissima*, surrounded by *Iresine Lindenii* in two lines, with Robert Fish Geranium growing between; then come two lines of *Mesembryanthemum cordifolium variegatum*, divided by *Alternanthera spatulata*. The whole bed has a margin of *Sempervivum tabuleforme*, and has come out well. In close proximity are growing some good specimens of *Solanums*, *Castor-Oil Plants*, and the beautiful *Ferdinandia eminens*, also some excellent examples of *Musa superba*, *Melanthus major*, and *Chamæpuce Cassabonæ*, or Fish-bone Thistle. Opposite to it is a bed somewhat different in character, having for its centre some nice plants of *Fuchsia Rose of Castille* and *Cassia corymbosa*, a yellow-flowering plant with dark shining foliage, and then a blooming plant of *Vallota purpurea*, and the whole edged with *Centaurea gymnocarpa*. Near this is a bed of *Aralia papyrifera*, also a grand specimen of *Musa Ensete*. On the same side is a noble group of *Castor-Oil Plants* averaging 8 feet high, with a front line of *Polymnia grandis*, a grand ornamental plant; in front is a mixed edging of *Eurothera macrocarpa* and a pink *Verbena*. Turning to the left is a serpentine bed of great length planted with *Trentham Rose* and *Christine Geraniums*, *Iresine Lindenii*, and a hedge 9 inches high of the pretty *Euonymus radicans variegatus*; while dotted over and around it are good plants of *Dracena Draco*, or Dragon Tree, *D. lineata*, *Cycas revoluta*, *Latania borbonica*, the *Bourbon Palm*, *Chamærops Fortunei*, *Seafortia Cunninghamii*, *Cordylina australis*, 9 feet high, and *Strelitzia Nicolai*. Next in importance is a large ovate bed containing very fine plants of *Fuchsia Rose of Castille*, with an undergrowth of various sorts of *Amaranthuses* not doing well, surrounded with *Fuchsias Magnifica* and *Regalia*, margin of *Echeveria secunda glauca*. On each side of a tree are good plants of *Phormium tenax*. In view conspicuously on the opposite side is a large round bed of *Aralia papyrifera*, *Abutilon Thompsoni*, edged with *Geraniums Golden Fleece* and *Shrubland Pet*, margin of *Sempervivum californicum*. Also near this is an irregular-shaped bed of immense size, containing, I was told, sixteen hundred plants of *Canna Annei*, edged with *Pelargonium Lucius* and *Canariensis*.

Having now reached the south-gate entrance we see before us projecting banks clothed very cleverly with mixed fine-foliaged plants of various colours and shapes, and in a sort of recess at the back is to be seen about the finest plant of *Musa Ensete* to be found in the grounds. In this as well as other parts of the park many fine specimens of various Palms and other attractive plants are dotted about. Then there are some fine plants of *Aralia Sieboldii* growing luxuriantly in positions which I was told they had occupied for ten years. This is proof that the plant is sufficiently hardy to be more extensively planted in sheltered situations. Turning round to the left we find banks of fine-foliaged plants, and a group of *Ficus elastica*, tall plants, with *Ipomæas* of sorts climbing up the stems. Further on is a clump of the Coral Tree, *Erythrina Crista-galli*, in full health and bloom. Passing by several beds less noteworthy, but quite in their place, we come to a bed of mixed flowering plants, which is quite a relief, and I thought several similar beds might have been added with good effect in different parts of the grounds. Then there is a bed of *Cordylina australis* of different sizes, with a carpet of *Begonia ricinifolia*, very pretty, edged with a broad band of *Santolina incana*, or *Lavender Cotton*.

On the left-hand side of this walk is to be seen as good a bit of carpet bedding as one might wish to see; it is a group of these beds consisting of two long narrow beds divided by a circular one, all planted with very dwarf-growing plants. The two long beds are planted alike, and running down the middle are several heart-shaped blocks of *Alternanthera magnifica*, surrounded by a single row of *Echeveria secunda glauca*. Then there are segments of Golden Feather, and for an edging to this *Alternanthera amœna* is employed in single line; the whole has a margin of *Sempervivum californicum*. The circular bed was planted in the form of a star, the centre of some sort of *Cotyledon underlined* with *Mesembryanthemum cordifolium variegatum*, then six segments of *Alternan-*

thera amoena, with a margin of *Sempervivum californicum*. The whole was arranged in exceedingly good taste. Further on is to be seen a remarkably fine plant of *Phormium tenax variegatum*, or the Variegated New Zealand Flax. One noticeable feature in this garden is the dotting-about of pans and pots of *Sedums* of various sorts plunged into the earth up to the rim; these have a very pleasing effect, and such miniature subjects as they contained could not be brought under notice in a better way.

We now leave this part of the park, and bearing towards the right enter the Fern glade. On the left are to be seen fine examples of *Dicksonia antarctica*, *Cyathea dealbata*, as tree Ferns very tastefully arranged; and under these are growing numerous specimens of the Bird's-nest Fern, *Platynerium*, and *Woodwardias*, with *Dracenas*, the whole having freshness scarcely to be excelled in a hothouse fernery. On the right of this is a vista of considerable length, planted with similar subjects, but not less noteworthy for health and vigour.

After passing by a fine plant of *Musa Ensete* standing boldly among beds of fine-foliaged plants and a remarkably good specimen of *Cycas revoluta* in the centre of a circular bed, we come to the best example of carpet bedding to be seen in the park. But it will be almost impossible to give an accurate description of the planning in these beds without the aid of a diagram. It consists of a series of four beds—two oblong and two circular beds. The former have raised panels in the centre planted with *Alternanthera magnifica* and *amoena* in single lines; then a broad band of *Mesembryanthemum cordifolium variegatum* and *Alternanthera amoena*; afterwards, two lines of *Mesembryanthemum* divided by *A. amoena*. In the corners left by the designer are some small mounds of *Sedum glaucum* and various other interesting plants. One of the round beds is divided into several heart-shaped blocks, or shields, of *Golden Feather Pyrethrum*, with a *Coleus Verschaffelti* for a centre. The hearts are margined with *Echeveria secunda glauca*. The outer panels are *Alternanthera paronychioides major*, and the whole bed has a margin of *Echeveria secunda glauca*, divided alternately with *Sedum glaucum* and *Alternanthera amoena*. The other circular bed, which I consider the prettier of the two, is cut up into two series of triangles, the inner one being filled with *Golden Feather*, and the outer one with *Alternanthera paronychioides major*. Then there are ten panels consisting of *Alternanthera amoena* and *Sedum glaucum* alternately, and a margin of *Echeveria secunda glauca*.

Next we come to the Alpine mound, on which are planted various kinds of succulents and a large number of the most popular Alpine plants. Next on the left are some mixed beds of flowering plants, and groups of large specimen plants of *Echeveria metallica*, *Dracenas*, and other interesting subjects. Further on is an oblong bed planted in a style quite different to that of any other in the grounds, very interesting, and exceedingly pretty. The centre consists of *Dracenas terminalis* and *Rumphi*, with a carpet of *Mesembryanthemum cordifolium variegatum*; the outer part of panels of *Alternanthera amoena* and *Echeveria secunda glauca* alternately. After this on the right-hand side is a bank of the lovely *Acer Negundo variegatum*, tall plants with an undergrowth of *Lamium aureum* and *Ajuga reptans* mixed, and a front line of *Rhus glabra*.

After passing by beds of mixed flowering plants and specimen foliage plants, and turning the corner by the waterfall, is the Fern bank, planted with numerous Ferns, &c. This feature will year by year grow more interesting as it becomes developed; it has been but recently established.

Leaving the Alpine and rockwork garden, and passing up the broad walk towards the refreshment room, we find an extensive and very pretty piece of bedding. It is a semicircle divided in the centre by the broad walk referred to, and, like some others, it is most difficult to describe. In the first place, there is a background of shrubs with a border of considerable width planted principally with panels of *Coleus Verschaffelti*, and *Alternantheras* of sorts, surrounded by an irregular band of *Pyrethrum Golden Feather* and other suitable plants. Next in front of these, but on a lower level, panels of *Alternantheras paronychioides* and *amoena* and a margin of the beautiful *Thymus aureo-marginatus*, a new *Golden Thyme* of considerable merit. The arrangement on the grass in front next the walk is pretty. The series of beds planted there has for a centre a raised basket of mixed flowers, very good and in capital position. Right and left of this basket are groups of *Dracenas*, *Aralias*, and *Echeveria metallica* in pots; and at the two ends are three circular beds, connected by a band of the new *Golden*

Thyme above alluded to. The circles are planted with bronze and silver-leaved *Geraniums* mixed with *Viola cornuta*, the flowers of which are just springing up high enough to set the beds off to the best possible advantage. In this part there are also some pans filled very tastefully with succulents of various kinds, and which add additional interest to the whole.

Turning to the left towards the west entrance are to be found a series of radiating beds, seven in number, with a circular bed in the centre from which the others radiate. They are planted very effectively as follows:—The circle is a basket of mixed flowering plants, and right and left of that are two long beds planted in diamonds, *Alternanthera magnifica* divided by lines of *Sempervivum*; the outer triangles are wholly of *Mesembryanthemum cordifolium variegatum*, and a line of *Alternanthera amoena* round the whole. These and every bed in the group have a hedge of *Enonymus radicans variegatus*. Taking the next two right and left, there is *Geranium Crystal Palace Gem* for the centre, and a line of *Creed's Seedling Geranium*, a golden-leaved one, and a band of blue *Lobelia*. The next two beds have square panels of *Coleus Verschaffelti* divided by *Centaurea candidissima*, with a broad band of the same. The centre bed of the seven, which is the largest, has a wedge-shaped line of *Centaurea gymnocarpa* for the centre, two lines on each side of *Christine Geranium*, and this is surrounded by a line of *Gnaphalium lanatum* and a bronze *Geranium* edged with *Centaurea ragusina*. This group of beds is exceedingly beautiful and tastefully arranged.

Having given the principal features, as nearly as it is possible to describe them, of the bedding arrangements in this park, I cannot conclude without complimenting Mr. Rogers on his tasteful arrangements, as well as for the general health and vigour of the plants in the grounds under his superintendence. It is plain that the wants of the plants are well understood and studied; for when one can witness such examples of plants with fine and healthy foliage luxuriating in an atmosphere of London smoke, there can be no want of skill in applying the necessities for their successful development.—T. RECORD.

SKELETONISED LEAVES.

MESSRS. DICK RADCLIFFE & Co. have sent us specimens, and although the process is not a new one, still the cheap rate at which they are now enabled to offer them, and the very



great value of them for all purposes where a relief in bouquet or other plant arrangement is required, render them very worthy of notice. They are found very useful, composed as a group under a glass shade, for mixing with winter bouquets, as a head dress for ladies' hair, and other purposes. We have seen at their warehouse a very effective cross made entirely of skeletonised leaves. It is 2 feet by 20 inches, and is formed of the skeletonised leaves of *Magnolia Thompsonianum*, *Holly*, *Aspen*, and *Beech*, pods of *Stramonium*. They are mounted on wire set on black velvet. This is a reduced portrait of the cross. Other leaves we saw are of *Berberis Aquifolium* and *Sycamore*; and a bouquet of *Poplar*, *Indiarubber*, *Holly* leaves, *Feather Grass* (*Stipa pennata*), and *Stramonium* pods.

THE SALWAY PEACH.

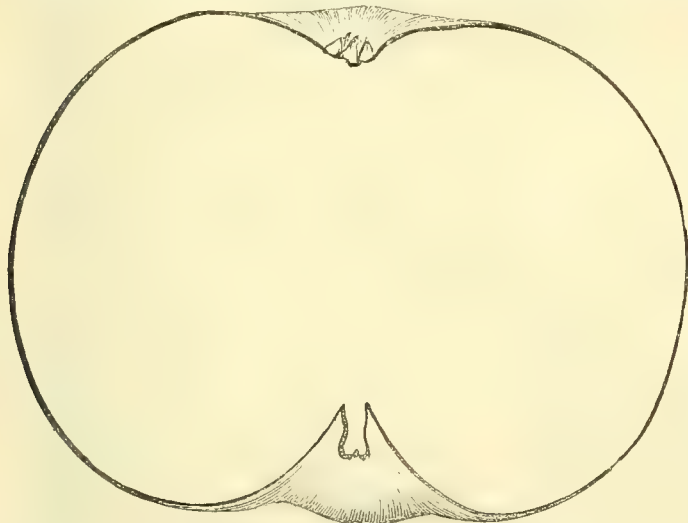
HAVING seen in your Journal a notice of the *Salway Peach* by Mr. G. Cosburn, I write to say that his statement is entirely at variance with the character of the *Salway Peach* grown here (near Dublin). We have had it on a south and south-west wall, and also in tubs under glass. With us it is a late Peach of great size, but only fit for cooking purposes; after being gathered a few days it turns quite mealy, and is destitute of flavour. Are there two varieties of the same name, or is there one *Salway* and another *Solway*?

[The *Salway Peach* is one of the largest and most handsome, but it is not always equally good. We are quite prepared to hear your account of it, as if left till quite ripe on the

tree it does turn mealy if kept for a few days. In this respect it does not differ from the other freestone Peaches, which have a yellow or apricot flesh; but surely in the case of a handsome excellent *late* fruit as this is, it is worth while to study its peculiarities, and either to gather it before it is dead ripe, or to use it when it becomes so. There are many Apples, Pears, and Grapes which do not keep after they are ripe. It is curious that the clingstone yellow-fleshed Peaches never become mealy or "pasty" however long they may be kept after gathering.]

RED HAWTHORNDEN APPLE.

AMONG the great orchard districts there are many varieties of fruits which have a high local reputation, and whose merits have never become generally known. The neighbourhood of Worcester appears to be particularly rich in this respect, and to the kindness of Mr. Richard Smith, the extensive nurseryman of that city, we are indebted for fruit of two Apples we have not before seen. That which we now notice is called locally



Red Hawthornden Apple.

Red Hawthornden, and from its size and earliness will prove a very valuable variety. The fruit is large and oblate, with four very obtuse angles on the sides; the crown is flat, and there is only a slight depression in which the eye is placed. Skin smooth, greenish yellow, with a red blush next the sun. Eye small and closed, set in a shallow depression. Stalk very short, set in a very deep cavity. Flesh white, tender, and juicy, with sprightly and agreeable acidity.

This very early and valuable culinary Apple comes into use in the end of August and beginning of September. Mr. Cox, the indefatigable fruit-tree foreman to Mr. Smith, says of this Apple, "The Red Hawthornden is an excellent grower as a standard or trained, but not so suitable for a pyramid. The general size of the fruit is much larger than the specimen sent some little time since, and is a valuable kitchen kind. It was exhibited at the Worcester Show in 1869, and took a first prize."

THE SUSSEX STANDARD FIG TREES.

HERE I am in a district than which none retains more abundant testimony of its Anglo-Saxon settlement. Within a circuit of five miles round Tarring are eight towns and villages with names ending in *ing*—Poling, Angmering, Patching, Ferring, Goring, Sompting, Lancing, and Worthing. Now "*ing*" is the Anglo-Saxon for a meadow, and meadow it was probably along the whole of the flat strip of land between the Southdown hills and the sea along the entire seaboard of Sussex. In that seaboard between Arundel and Worthing Fig trees as standards are numerous, luxuriant, and annually productive. The temperatures of each season there are mild, tempered as the air is by its vicinity to the sea, and sheltered from the north as the entire district is by the closely neighbouring hills. The soil is a rich alluvial loam, and in many places it is four spades deep before you reach the subsoil, and that is really a loam, but with more clay in it than is in the surface soil.

Market gardening, chiefly for vending the produce at Brighton, is pursued rather largely at Tarring, Lancing, and Sompting. Mr. Botting has a good-sized garden besides the Fig garden at Tarring, and its productions were very creditable to their cultivator. The Onions, both spring and autumn-sown, were much above the average size. The Pear trees on the walls are well trained and loaded; but the most novel sight to me was the border, about 100 feet long, beneath a south wall cropped exclusively with Tomatoes. There were three rows of staked plants, from which bushels of ripe fruit had been gathered, and yet each plant was still loaded to excess with fruit in various stages of ripeness.

Waggons were loading this mid-September with baskets filled with Kidney Beans, Brussels Sprouts, and Potatoes. The last-named here, and everywhere else around Worthing, are very slightly affected with the disease. I have always put the same question to the men forking out the crop, "Are there many diseased?" and the invariable answer has been, "No, only a few." Cold and excessive moisture are the most potent promoters of the disease, hence the dismal reports I have from North Lincolnshire and Scotland. A letter from Dingwall just received says, "The rain is almost incessant and daily, and the Potatoes are nearly all diseased." No wonder! The market gardeners on the Sussex coast employ large quantities of seaweed as manure, and the luxuriance of their Cabbageworts and Jerusalem Artichokes, and the Potato's freedom from disease, attest that it is especially acceptable to them.

The district seems especially productive of vegetable esculents, for the Morel (*Phallus esculentus*) is found in Patching and Castle Goring Woods. The Truffle also is prolific in this neighbourhood. Cartwright, in his history of the "Rape of Bramber," published in 1832, says, "About forty years ago William Leach came from the West Indies with some dogs accustomed to hunt for Truffles, and proceeding along the coast from the Land's End in Cornwall to the mouth of the river Thames, determined to fix on that spot where he found them most abundant. He took four years to try the experiment, and at length settled in this neighbourhood, where he carried on the business of Truffle-hunter till his death." Nor was he the only humble celebrity who lived by and loved the vegetable products of this neighbourhood. I rambled to "the Miller's Tomb," and he who rests there not only loved the country but loved his garden too. Many have wished, and a few have succeeded, to have their bodies deposited in some place that life's events had especially endeared to them. One of the few was John Oliver, a miller, whose mill was on Highdown Hill. Near that mill, beneath the shade of a cluster of trees, and on a spot commanding a panoramic view extending as far to the westward as the Isle of Wight, he constructed his own tomb twenty-seven years before his death, and kept beneath his bed the coffin which enclosed him in 1793. The epitaphs on his monument were written and graven on it during his lifetime, and this one offers an unnecessary apology—

"This is the only spot that I have chose
Wherein to take my lasting long repose.
Here in the dust my body lieth down—
You'll say it is not consecrated ground—
I grant the same; but where shall we e'er find
The spot that e'er can purify the mind,
Or to the body any lustre give?
This more depends on what a life we live."

When I took up my pen to write these notes, I intended to confine them exclusively to the standard Fig trees of Sussex, but have not arrived at them yet, nor shall I until a few more sentences have been written, for I see that the Rev. John Wood Warter, rector of West Tarring, in his amusing "Parochial Fragments," doubts the Romans having brought the Fig hither. This seems to me a classical heresy. Be that, however, true or untrue, it is quite certain that in the thirteenth century they were so largely cultivated as to be specially mentioned by Matthew Paris as one of the fruits destroyed by the inclement summer of 1257. Now, for the standard Fig trees of Sussex, and beginning with Arundel Castle. Mr. Maher, who was gardener there in 1818, mentions that seven such standards were in the garden, six being of the Violette or Bourdeaux variety, and the seventh of the White Marseilles. The last named was the largest, its stem being

6 feet 9 inches in circumference at 2 feet above the surface, and the branches covering a circle 30 feet in diameter.

I pass on to Tarring, known by that name in Anglo-Saxon records, for King Athelstan about the year 943, gave the manor "to the church of Christ in Canterbury," and in Domesday Book it is mentioned as part of the Archbishop's possessions. In 1277, the tenant not paying his rent, which might be taken in kind, a record states the prices at which some of the produce might be claimed: "a good goose for 1*d.*, two good hens, 1*d.*; five score of eggs, 1*d.*" A quarter of Wheat was 1*s.* 6*d.*, but the Archbishop thought that he ought to have more for his money, and demanded two good geese for 1*d.*, four fat hens for 1*d.*, the first hundred of eggs for 1*d.*, and the second hundred for nothing!

Well, in process of time, Thomas Becket became Archbishop, and tradition has handed down as a fact that he planted Figs brought from Italy in the Manor grounds of Tarring. There

is no record of his residing there, but it is likely that he did, for as I have stated, it was one of the estates belonging to the see, was a pleasant place for retirement, and it is certain the Archbishop occasionally resided among the tenants of the archiepiscopal estates. A large room and a smaller one still existing, tradition tells, were the hall and chapel of Becket's palace. They may have been constructed of its materials, for they are very old, but their architecture is of a date full two centuries later than that in which Becket lived. If chapel it was, it is now the parish school, and it may be said of this, as was said of a similar change of occupation at Shrewsbury—

"The chapel's use, it seems, was none so great:
They turn'd it to a school—a mighty feat.
Preaching, 'tis plain, nor heart nor head could mend,
So learning's now whipped in at t'other end."

There is nothing to prohibit it being true that Becket brought from Italy the Fig to Tarring. Ecclesiastics have introduced

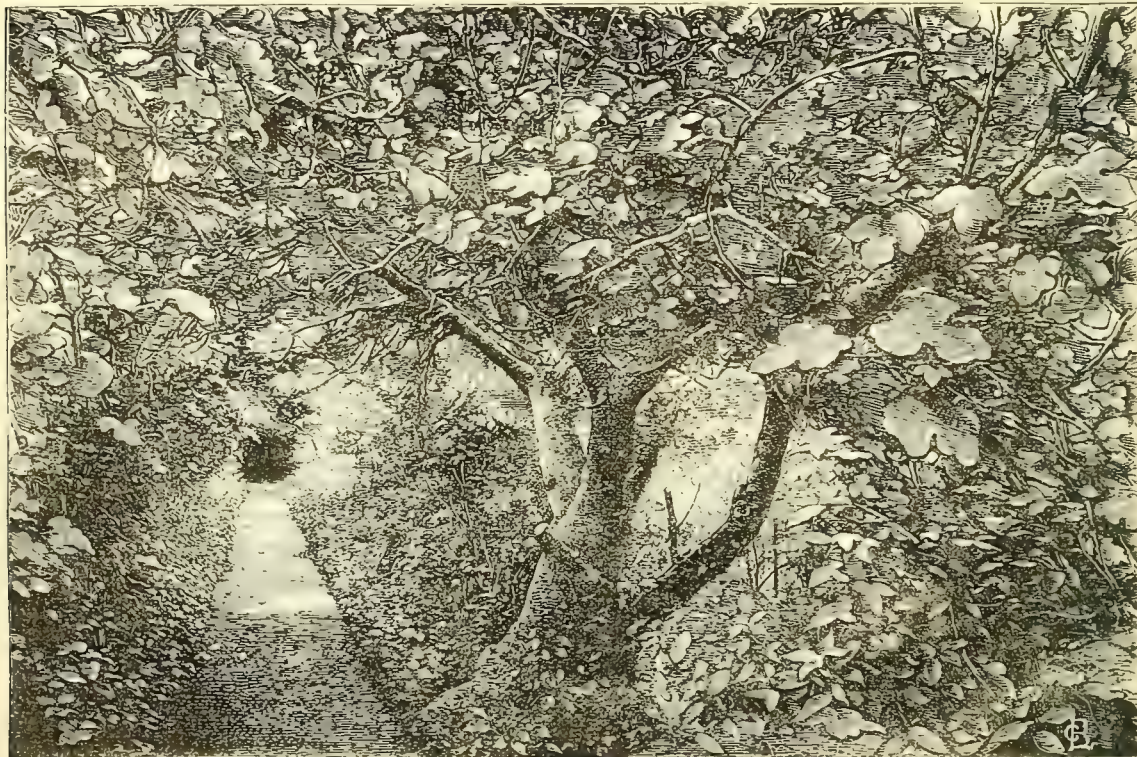


Fig Garden—West Tarring, Sussex.

this fruit to more than one of the archiepiscopal residences. Cardinal Pole planted it at Lambeth, and Archbishop Cranmer at Mitcham. In both these instances the variety is the White Marseilles, and so is the large standard in the Tarring garden which is here portrayed, and that garden adjoins the grounds round the ancient rooms said to have been Becket's.

The Rev. Mr. Warter in the volume I have before referred to, says, "At Tarring in general cultivation we have but five sorts—the Brown Turkey; the large blue, sometimes called Black Ischian; the Marseilles, or large white Fig which is also called the Madagascar, an easy corruption; the larger Green; and the beautiful smooth green or Yellow Ischian. The last-mentioned is a very shy bearer, but the most luscious of the three. I am inclined to think that the red Fig, which King James tasted with great pleasure in the Dean's garden at Winchester, was none other than the last-mentioned, as I have seen it in a fine season, and when full ripe, change from green to yellow, and from yellow to a sort of brick colour." If that was the variety which obtained the Royal Stuart's approbation, I knew (for he has passed on) a cleric who coincided with him. He was a real connoisseur of Figs, an Oxonian, and a member of Brazenose College—a *bon-vivant* was he—a lover of the old College port wine and ale; yet little knew he that the College name was a mere corruption of *Brasin-huse*, a brew-house, for singularly enough the College retained the name of the royal outbuilding on the site of which it was built.

The Fig garden at Tarring is three-quarters of an acre in extent, and is in the occupation of Mr. Botting. There are about one hundred trees in it, chiefly of the Purple Turkey variety, and these bear most abundantly and unfailingly. They have no pruning, and the knife is only employed occasionally to thin the branches. These interlace, for the trees are planted only 12 feet apart, and are about 18 feet high. They form a dense grove, and nothing flourishes beneath them. The central walk shown in the drawing is an avenue of Fig trees 247 feet in length.

The grand old White Marseilles tree, the most prominent figure in that drawing, is believed to be a descendant of one of those planted by Archbishop Becket. Judging from other large Fig trees, the ages of which are known, I should conclude that it is quite 150 years old. The circumference of its stem just above the soil's surface is 9 feet, and it separates into four main limbs, each nearly 3 feet in circumference, and the branches from them cover a circle 40 feet in diameter; they would extend much further if it were not for the other Fig trees crowded around. They rarely ripen a second crop, but they did so about three years since. The first crop ripens in August, September, and October, and the average produce of a tree is twenty dozen of Figs. Mr. Lower in his History of Sussex, remarks that a bird resembling the Beccafico or Fig-eater of Italy, migrates hither during the Fig season. The flocks remain five or six weeks, and then disappear as they

came, seaward. The Italian Fig-eater is known to ornithologists as the *Sylvia naevia*, but the Fig-eater of Sussex is the White-throat, *Sylvia cinerea*.

At Mr. Bushby's, East Nursery, Worthing, is another very large Fig tree. He told me that it was planted about eighty years since. It is the Brown Turkey variety. It is 15 feet high; has no main stem, but twenty-three branches issuing directly from the root at their base, each about 20 inches round, and extending 27 feet in length, the entire circumference of the branches is nearly 160 feet. It would have been much more, but the branches have to be shortened to keep them within the limits required. It is very vigorous, and bears well annually, but has never ripened a second crop in the year since Mr. Bushby knew it.

I have no notes worth publishing relative to the standard Fig trees further eastward; one or more is to be seen in many gardens about Lancing and Sompting, where there is a very small Fig garden, but all are of smaller growth and age.

I will conclude by mentioning that the original tree planted by Cardinal Pole in Lambeth Palace garden is no longer in existence; it was planted against a wall on the Westminster side of the garden. Five descendants from it are planted between the buttresses of the library, formerly the dining-hall. It bears the date, 1675, and was built in Bishop Juxson's time, but it has been considerably altered since. These trees are rambling far from the wall. The thickest stem is 2 feet 1 inch in circumference at about 2 feet from the ground. They are now bearing very well.—G.

HOT-AIR HEATING.

WITHOUT approaching controversy, may I tender a hint to "YOUR REPORTER?" If, following the Gurney principle (which is pushed to its greatest extent in my arrangement), he will provide a sheet of water, heated by conduction to a high vaporising point short of ebullition, and place it below his heated tubes, he will find that the incoming air meeting with a column of vapour in its course will bear it with it against the warmed pipes, and provide itself with a sufficiency of moisture, at the same time cooling the tubes to a point much below what they show at present, and, consequently, the air which escapes to the chimney also. It may be that the evaporating pans of which "YOUR REPORTER" speaks are heated, and are below the tubes; but if they are not, I think he will not repent if he takes the advice of his friendly antagonist.—E. H.

THE VINE INSECT—PHYLLOXERA VASTATRIX.

THE fell pest or Vine insect (*Phylloxera vastatrix*—*Peritymbia vitisana*, *Westw.*), which has proved so pernicious to the Vine on the Continent, especially in the south of France, has mysteriously made its appearance in the south of Scotland, and that, too, in a very severe manner, as one house of the most vigorous and promising young Vines we ever recollect seeing has entirely succumbed to its ravages. The house affected has only been three years planted, and the borders were judiciously made anew at that time, the result being an astonishing growth the first and second year, with no indication of the insect's presence previous to the Vines being started this spring. Then a stunted tardiness in vegetation, betokening an absence of vitality and imperfect root action, was apparent. This under most skilful management the Vines subsequently overcame, producing and finishing a very good crop of Grapes. The growth which previously distinguished them, especially that of the leading shoot, is this season no thicker than a goose's quill. The foliage is also diminutive, and when exposed to the sun it flags. On the roots, which appear to be their principal place of attack, are hosts of the small insects. The mystery is, How they got there? If placed there with the Vines when first planted, and so prolific as they are said to be, they would certainly have mustered in sufficient force to have manifested themselves the former season. My opinion is they are capable of attaching themselves to (probably in the chrysalis state), other plants than the Vine, and being transferred with them.—T.

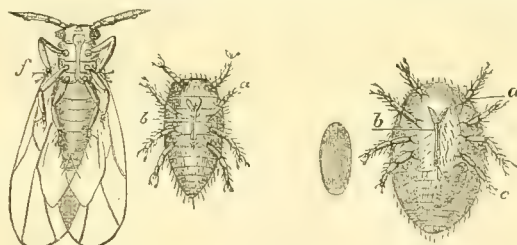
[In order that our readers may be able to distinguish the pest which is rapidly spreading, we republish the following illustrated description which first appeared in "The Gardener," as an extract from the "Revue Horticole," of an article by M. Planchon:—

Its best-known form is that in which no trace of wings can be discovered. When the insect is about to lay its eggs (that is, in

its adult female state), it forms a small ovoid mass, having its inferior surface flattened, its dorsal surface convex, being surrounded by a kind of fillet, which is very narrow when it touches the thoracic part of its body, which, formed by five rather indistinct rings, is hardly separated from its abdominal part of seven rings.

Six rows of small blunt tubercles form a slight protuberance on the thoracic segments, and are found very faintly marked on the abdominal segments. The head is always concealed by the anterior protuberance of the buckler; the antennae are almost always inactive. The abdomen, often short and contracted, becomes elongated towards laying-time, and there can be easily seen one, two, or sometimes three eggs, in a more or less mature state.

The egg sometimes retains its yellow colour for one, two, or three days after it has been laid; more often, however, it changes to a dull-grey hue. From five to eight days generally elapse before it is hatched. The duration of this period depends a good deal on the temperature. The quantity of eggs, and the rapidity with which they are produced, are probably determined



Phylloxera vastatrix (J. E. Planchon).—Female specimens and their eggs. a, Antennae; b, horns or suckers; c, egg plainly visible in the body of the insect; f, winged form of the insect. All magnified.

by a variety of circumstances—the health of the insect, the quantity of nourishment it is able to obtain, the weather, and perhaps other causes. A female which had produced six eggs at eight o'clock A.M. on the 20th of August, had fifteen on the 21st at 4 P.M.—that is, she laid nine in thirty-two hours. Other females lay one, two, or three eggs in twenty-four hours. The maximum quantity is thirty in five days. The eggs are generally piled up near the mother without any apparent order, but she sometimes changes her position so as to scatter them all around her. They have a smooth surface, and adhere lightly to each other by means of a slimy matter which attaches to them.

Hatching takes place through an irregular and often lateral rent in the egg, the empty and crumpled membrane being found among eggs in different stages of hatching.]

NOTES AND GLEANINGS.

EARLY WINTER.—Not only have the Fells near Howgill, in Westmoreland, and the Carnarvonshire mountains, been covered with snow a week since—in some places it was 4 inches deep—but in the neighbourhood of Blandford, in Dorsetshire, we know that the frosts have been sufficiently severe to form ice. At Luton Hoo 5° below freezing has been registered, and even near London Coleuses and some of the more tender flower-garden plants have had their beauty destroyed.

—At the LYONS HORTICULTURAL EXHIBITION, which was opened on the 1st of August of this year, there were shown two Robinias, one by the firm of MM. Durousset, and the other by that of M. Morel. They are both said to be evergreen, and if this be true, will prove valuable acquisitions for purposes of ornamentation.

—POTATOES IN HOLLAND.—The increase of the Potato crop in the province of Gröningen (North Holland) has become exceptionally important the last few years, in consequence of the number of Potato flour mills established there, and the increase of the mills influences the more extensive cultivation of Potatoes. The opportunities there are more favourable than elsewhere, owing to the nature of the ground, the Potatoes being planted in old turf-ground which is intersected by small canals, by means of which their transport is considerably facilitated. In the villages of Wildervank, Veendam, Muntendam, and Hoogezand there are thirteen mills, which crush daily more than 750 lasts, producing 225,000 kilogrammes of flour every day, the greater part of which is expected to be sold in the English markets, as very little is used for glucose (syrup) and home consumption. A great activity prevails in the mills at the present time, owing to the extensive disease among the Potatoes; nevertheless the crop is large.

—THE Royal Society of Agriculture and Botany of GHEENT

will, next year, hold an INTERNATIONAL HORTICULTURAL EXHIBITION in that town. The site of it is to be upon the winter garden of the Casino; and it will be open from the 30th of March to the 6th of April.

— THE PAST SUMMER has been eccentrically favourable to certain natural productions—the Camberwell Beauty, one of the rarest of our butterflies, has been comparatively abundant; Tomatoes have borne profusely; and the Agave americana has not only bloomed in the Royal Horticultural Society's conservatory, but at Miss Elliotson's, Clapham, and two other places.

— EUCALYPTUS GLOBULUS is at present being planted in great numbers throughout Spain. Along the sides of the roads and in the public promenades it is often now to be seen; and the railway companies are rearing young plants to a considerable extent.

— A REMARKABLE SPORT of the MAY DUKE CHERRY has been produced in the grounds of M. Ferdinand Massange, of Bailonville. The leaves become narrow at the end, so as to resemble those of the Peach, or even the Willow. Some are 8 inches in length, and an inch in width; others are 4 inches in length, and about the third of an inch in breadth.—(*Belgique Horticole.*)

— PARKS AT NEWCASTLE-ON-TYNE AND LEEDS.—The park at Newcastle is about to be formed by the Corporation on the Town Moor. It is proposed they shall pay £75,000 to the freemen for the right of herbage which they will lose by the enclosure—that is, the right to pasture their horses, cows, and sheep upon the Moor. The Roundhay Park at Leeds is now opened to the public. It occupies almost 800 acres, and has a lake nearly three-quarters of a mile in length.

— M. J. SISLEY, of Lyons, has raised a new variety of Pelargonium, with double white flowers. It is the progeny of a plain white fertilised by a double red, and seems to be very floriferous.

— RADISHES.—Most of our readers if asked how many varieties of Radishes there are, would reply six—the Long, the Turnip, the Oval, and the red and white of each, and they will be surprised to hear that more than thirty varieties were shown in one collection at the last Lyons Horticultural Exhibition.

— THE WILLOW which grew by the "waters of Babylon," and whereon the mournful children of Judah hung up their harps, was not, as Linnaeus and others have supposed, the *Salix babylonica*. It is now thought to be a kind of Poplar, incapable of being grown even in the northern parts of Syria, and, therefore, not likely to be able to endure our climate. The ordinary Weeping Willow has been brought from China and Japan.

— A NEW TEA ROSE, *Perle de Lyon*, has been raised in France. It is much like *Maréchal Niel*, only more beautiful, and it is thought probable that it will supplant both this and *Madame Falcot*.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

AMOMUM MELEGUETA. *Nat. ord.*, Zinziberaceæ. *Linn. arr.*, Monandria Monogynia.—A native of Western Tropical Africa, supposed by Dr. Hooker to be the natural condition of the plant cultivated in French Guiana and Demerara, and which produces the Grains of Paradise. Leaves from 4 to 6 inches long, 1 inch broad; ligule very short, sheath slender. Scape densely clothed with imbricate bracts, which are coriaceous and dull green, with red margins and tips. Flower very pale pink, suffused with yellow towards the centre.—(*Bot. Mag.*, t. 5987.)

MONANTHES MURALIS. *Nat. ord.*, Crassulaceæ. *Linn. arr.*, Dodecandria Dodecagynia.—The genus *Monanthes*, which consists of six species, was supposed to be confined to the Canary Islands until Mr. Ball found a specimen of the present species on Mount Tezi, in Morocco. Stems branched from the base: branches prostrate, 1 to 3 inches long, cylindric, naked below, bearing a densely imbricate rosette of twenty to thirty leaves towards the apex. Petals six, elliptic-ovate, acuminate, golden yellow, speckled with red on the back beneath the tip, which is keeled, twice as long as the calyx, recurved.—(*Ibid.*, t. 5988.)

BRODIAEA MULTIFLORA. *Nat. ord.*, Liliaceæ. *Linn. arr.*, Hexandria Monogynia.—A native of California. Flowers in a subglobose head, crowded, subsessile or on pedicels one-sixth

to half an inch long. Perianth bright blue; tube ventricose and obscurely lobed, half an inch long; lobes rather shorter than the tube, oblong, subacute; tips slightly incurved, spreading, nearly flat.—(*Ibid.*, t. 5989.)

MASDEVALLIA LINDENI. *Nat. ord.*, Orchidaceæ. *Linn. arr.*, Gynandria Monandria.—"M. Lindenii was flowered at the Glasnevin Gardens by Dr. Moore, F.L.S. It was supposed to have been received by him amongst a batch of Central American Orchids, collected by Roezel; but André states that it was introduced by G. Wallis from New Grenada in 1869. Scape 1 foot long and upwards, flexuous, with three or four distant appressed sheaths an inch long, green variegated with dull red; upper sheath or bract distant from the flower. Flower 3 inches long. Ovary short, straight, deeply grooved. Perianth blood red; sepals connate below into a decurved yellow tube, which is rounded and hardly gibbous at the base."—(*Ibid.*, t. 5990.)

SALVIA TARAXACIFOLIA. *Nat. ord.*, Labiatæ. *Linn. arr.*, Diandria Monogynia.—A native of the lower slopes of the Great Atlas, and discovered there by M. Balansa in 1867. It has been seen by Dr. Hooker growing in broad patches along the base of the Great Atlas, and presenting a very beautiful appearance. Calyx half an inch long, tubular-campanulate; tube densely appressed, tomentose, and clothed with spreading hairs; lips nearly straight, upper three, lower two-lobed. Corolla nearly twice as long as the calyx, pale pink, with a yellowish disk to the lower lip, and purple-speckled prominent pilose palate; tube ventricose, villous near the faux and on the short galeate compressed upper lip; and with a ring of brown hairs near the base within.—(*Ibid.*, t. 5991.)

LACHENALIA TRICOLOR. *Nat. ord.*, Liliaceæ. *Linn. arr.*, Hexandria Monogynia.—*L. tricolor*, according to Mr. Baker's determination, is a very variable plant, and includes as forms *L. quadricolor*, *L. luteola*, *Jacq.*, and *L. aurea*, *Lindl.*, of which the last, that now figured, is by far the most elegant, and is further remarkable for its bright colour and the waxy texture of its flower. It flowered in the Royal Gardens, Kew, in March of the present year from bulbs. Leaves dark green, uniformly coloured, or speckled or spotted with darker spots. Scape 6 to 10 inches high, reddish, variegated with darker red or purple. Perianth golden yellow, waxy, 1 inch long, tubular; base rounded, rather gibbous; outer segments connate to or below the middle, obtuse, with a gibbous dorsal boss below the tip; inner almost twice as long as the outer, pale yellow, spatulate, slightly spreading; tip rounded or obtuse.—(*Ibid.*, t. 5992.)

GALLOWAY PIPPIN OR CROFT-EN-REICH APPLE.—Of this excellent kitchen Apple we gave an engraving and description in our twentieth volume, page 236. The editor of the "Florist and Pomologist" adds, "This fine culinary Apple was exhibited last season before the Fruit Committee of the Royal Horticultural Society, and was awarded a first-class certificate by that body. It is regarded as an excellent late variety, succeeding well in the north. The fruit is above the middle size, roundish, somewhat flattened, and having a slight tendency to angularity around the eye. The skin is a greenish yellow, taking on a pale glow on the exposed side, strewed with russet dots, and having here and there traces of russet. The stalk is short and stout, seated in a deep cavity, and the eye is medium-sized and partially closed. The flesh is firm, but tender, and of a yellowish colour, with a greenish tinge, juicy, with a pleasant brisk acidity. It is in use till the end of January, and may be had even much later."—(*Florist and Pomologist*, 3 s., vol. v., p. 193.)

GLOXINIA CULTURE.

It may with propriety be said of the Gloxinia, "A good old plant of the good old times;" venerable for its antiquity, and admired for the unsurpassed richness of its handsome flowers, besides other striking characteristics—namely, its large massive lanceolate leaves of velvet texture, many of which are beautifully veined, while others are plain, but all furnished with foliage of the most pleasing shades of green.

G. maculata and *speciosa*, the progenitors of a now numberless progeny, were both introduced into Europe in 1739 from South America. Since that period Gloxinias have always held their own in the esteem of the cultivator.

In the warm rather close shade, where the sun's glare is softened by the glass being shaded by means of light scrim or other thin shading, the Gloxinia will luxuriate. Cold draughts, and the habit often practised of dashing water over them out

of a widely-perforated rose, are very injurious. This is a sure means of rotting the flowers and blotching the foliage while yet undeveloped. On the whole, while they delight in an abundant supply of water at the root, when in full growth syringing should never be practised, further than a light dewing at intervals after excessive dry heat; but a humid warm atmosphere is to be preferred, both to grow them well in, and to keep them in healthy rich foliage.

Culture from the Leaves.—There are various methods followed in multiplying by this means. Some make incisions in the main veins on the lower surface of the leaves, and lay them flat on a bed of silver sand in the propagating house. Over the cuts small pebbles are placed, to prevent the leaf shifting until roots are formed; and in the course of time small crowns are formed, and each makes separate plants, which will flower the following summer if carefully ripened and preserved over the winter. Another, and I think a better plan, is to cut up the leaves into slips, following the direction of the veins, and running the knife out without damage to the margin. This operation should be performed with a very keen-edged knife, so that the tissue of the leaves is not lacerated. By this means the leaves may be divided into a number of wedge-like pieces, narrowing to the bases. These are inserted into pots filled with silver sand intermixed with a little peat soil; and after moistening the body of the compost cover with a bell-glass, or place the tops inside the glass case, if the house is furnished with such. Keep moderately close, and never wet the leaves while applying water to the roots, at the same time being careful that the cuttings do not suffer from damp. Under such favourable conditions roots will soon be formed, to be succeeded by bulbs and minute leaves; but it is the best plan to pot off singly as soon as well rooted, so that the progress of the two latter is not checked, and that nice plump bulbs may be produced before the fall of the year. After the rooted portions of the leaves have been put separately into pots, have them watered and returned to the place they formerly occupied, and give them the same watchful attendance as hitherto, not once allowing the soil to get dried up, which would permanently cripple their growth, until indications of their going to rest are shown at the end of summer. No more water will be required after such symptoms, except enough to prevent the soil from getting dust dry, and thereby causing the bulbs to get shrivelled up.

General Attention.—Early in the February following examine the bulbs, after having wintered them in a warm dryish place, and in all probability signs of fresh action will be seen in some of them. Those should at once be repotted into pots of somewhat greater dimensions, using a compost of equal parts loam, leaf mould, and silver sand, adding a little well-reduced cow manure, but only a little: sift the whole through a half-inch sieve, crock the pots abundantly, and cover the drainage with rotten moss, then fill with the compost to the rim of the pot, place a little heap of silver sand in the centre of each pot, and insert the bulbs amongst the sand. Rather more than cover the bulbs, and press the soil moderately firm together; and when all have been potted, plunge them into a bottom heat of 70°, but do not give any water for some days; water has a tendency to rot the bulbs while yet in a partially inactive state.

When the plants begin to grow kindly, they may then be freely watered, always heating the water to the temperature of the soil. Allow abundant root-accommodation by fresh shifts when the roots have reached the outside of the balls of soil, and admit air cautiously; at the same time they should not be kept wholly without air if the weather is at all favourable. By pursuing these simple instructions handsome plants will reward the efforts of the cultivator.—A. KERR (in *The Gardener*).

WORK FOR THE WEEK.

KITCHEN GARDEN.

TRENCH and ridge every spare inch of ground; however, to have vacant ground to any extent in the present age is in my opinion a sign of bad gardening, especially if drainage and a proper rotation of cropping be systematically followed. Plant out the main crop of *Cabbages* for cutting in May, June, and July. Let the ground be thoroughly manured, as they will occupy it a long time, producing after cutting a most abundant crop of Coleworts in the summer and winter, especially the Vanack and Early York. Prick out all the small plants in beds to stand the winter, likewise plants of Red Cabbage. Transplant *Cauliflower* plants in frames, hand-glasses, or matted beds for spring planting. A few of the largest plants may be

potted and kept in a cold frame; they will suffer no check in the spring when planted out, and will come in very early. Earth-up *Broccoli*, *Green Kale*, and *Savoy*s as high as possible without injuring their leaves. Store the late *Onions*, and examine the earliest ones; likewise store *Carrots*, *Beet*, *Salsafy*, *Scorzonera*, and *Skirret* in sand. The *Parsnips* are better in the ground and protected with a little litter in frosty weather. A good piece of early or second early *Potatoes* ought to be planted this month when the ground is dry and suitable. It is quite possible to have good *Potatoes* nearly ready for lifting before the disease can do much harm in our climate. This has been proved three years in succession, and the seasons different in earliness and dryness. It may be said that early *Potatoes* failed this year as much as the late ones; this is true to a certain extent where they were not ripe and ready to take up by the middle of July. Planting in February or early in spring is best in wet soils; the crop will be as early as, or earlier than the autumn-planted one, as the sets need not be buried so deeply. Either way, I find planting on ridges the best, the rows made very wide, so that *Cauliflower*, *Broccoli*, and other vegetables can be planted between them in the spring. No manure is used, but charred earth is laid 5 or 6 inches deep in the drills above the sets, which are planted whole; the frost never penetrates so as to hurt them through this substance. Pot *Mint*, *Tarragon*, and *Sorrel* for forcing in winter. Gather *Tomatoes* as soon as they begin to colour; if there be danger from frost the latest may be cut off in bunches and ripened in-doors in a good dry heat. As soon as the *Cabbages*, *Lettuces*, *Cauliflowers*, &c., are transplanted, the kitchen garden should be thoroughly cleared of all weeds, cut vegetables, and decaying substances. Where chips of wood, old pea-stakes, or hedge-clippings can be procured, it is a good plan to keep a fire constantly burning and charring every sort of refuse; keep the material for spring cropping, it will be found the most useful of composts.

FRUIT GARDEN.

Let the planting of fruit trees be proceeded with by the end of the month where it is necessary to do so, avoiding deep and highly manured borders, draining well for stagnant water, and planting high if the situation is naturally humid. Proceed with gathering *Apples* and *Pears* on all favourable opportunities; set the former in heaps to sweat, then wipe and examine them singly, and finally store them away on dry open shelves in layers. Some sorts of *Pears* must be kept warmer in order to become mellow.

FLOWER GARDEN.

Where evergreens are to be removed let it be done as soon as possible or circumstances will admit, for the most favourable season for this kind of work will soon be past. The scarce varieties of zonal and variegated *Geraniums* should not be risked in beds too long; they had better be taken up and potted immediately the weather becomes at all threatening. After potting, it will be a good plan to place them on a gentle bottom heat in a pit or a house where the atmosphere can be kept sufficiently dry to prevent the foliage being injured. So circumstanced they will soon become established, when they may be stored away for the winter in a cool dry house where they will be out of the reach of frost. Any beds which may have become shabby, and which are to be planted with bulbs or anything else for spring decoration, should be cleared at once and replanted. Keep grass short and frequently rolled, so as in some measure to prevent the growth of moss and keep the surface firm and smooth; also roll gravel walks frequently in damp weather, so as to render them smooth and comfortable to walk on. I would recommend those of your readers who are fond of making experiments to cultivate the yellow *Picotée*, being certain there is ample room for improvement, and that those who persevere in well-directed efforts to ameliorate them will reap an abundant harvest. *Auriculas* will require to be placed in their winter quarters; being perfectly hardy, many are destroyed or materially injured by being overmuch cared for. Too much moisture must be avoided, and a dry airy situation should be selected for the frame to stand in during the winter. Plant offsets, and prepare for the best beds of *Tulips*. Take advantage of dry weather to turn and sweeten the beds. Small pipings of *Pinks* are often dragged out of the ground by worms; carefully attend to them, and refasten where required.

GREENHOUSE AND CONSERVATORY.

Early *Chrysanthemums* will now be in a forward state, and such as show their buds prominently should be placed under glass if it is desirable to have them in bloom as soon as

possible; they may now be safely placed where a little artificial heat can be afforded them. Take care, however, that they are placed near the glass, well supplied with manure water, and air given them freely, as anything in the shape of close confinement would soon ruin them; indeed, the whole stock of these should now be placed where it can be covered at night in case of frost, for although they will bear more of that than most plants, it is not good policy to leave them to the mercy of the weather much after this season, except in favoured localities. It is better, however, to place them in skeleton frames, or in a sheltered situation, where they can be covered in case of need, than to huddle them too thickly together under glass, or to put them, as is sometimes done, under the shade of Vines. See that the tree Violets are perfectly free from their enemy the red spider, for if the foliage is allowed to get disfigured at this season the plants will remain unsightly long afterwards. See that Epacris and other winter-blooming plants are placed in a light part of the house where they will be fully exposed to the sun, so as to get the wood well ripened, and to insure their blooming freely. Examine Heaths frequently, or anything else subject to mildew, and apply sulphur immediately the pest can be perceived. Water must be very carefully applied at this season, especially in the case of very large specimens, for there is much more danger in over-watering now than when the weather is warmer and the plants more active; therefore look over the plants frequently, and never water until it is absolutely necessary. Any of the late-growing Heaths which may be in want of more pot room may still be shifted, but do not expose them to cold winds, and water very carefully afterwards, for the roots cannot be expected to progress very rapidly at this season. Get everything requiring it neatly tied as soon as possible, so as to give the plants an attractive appearance, and render the house as interesting as possible without any grand display of bloom.

PITS AND FRAMES.

Regulate the general bedding stock, and get the majority established in small pots. Give as much air as possible, and restrict the supply of water to mature their growth. For protection a stock of straw or reed mats should be made in wet weather, as common mats afford scarcely sufficient protection to the half-hardy plants in store pits.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Celery.—Cleaned and tied-up our later crops of Celery. The former consisted in nipping out with the point of a knife any suckers or small side shoots which had sprung from the bottom. If we did not do this each plant, when taken up, might have half a dozen smaller ones round it, which, though useful for some purposes, are not generally preferable. A few of the lower leaves may also have to be taken away, but unless small, weakly, or discoloured, very little of this will be required. The best remedy for grub is to sprinkle the plants very thinly with soot and wood ashes several times in summer. This deters the Celery fly from depositing its eggs. When once deposited and the grub is growing between the skins of the leaf, nothing will do except picking off the leaves and destroying them. It is in every way best to pick out the side buds of Celery before it is finally planted, as the plants are not much disturbed when they become larger.

This cleaning and tying showed us how dry the ground had been about the roots ten days ago. We have no doubt that this dryness is the principal cause of bolted heads. Few plants throw off more moisture by insensible perspiration than the foliage of Celery does in a dry bright day. We gave the roots a good watering with house sewage, and then watered overhead with clean water. We may state that plants that were well watered a day or so before earthing-up a month ago, had the roots so dry that a fortnight or three weeks more would most likely have tempted them to throw up their flower-stems.

Tying-up was done after cleaning and before watering. Bands of the roughest bast matting not good enough for much else will do for this purpose. The band should be placed round rather loosely to give room for free growth, and at from 9 to 15 inches from the soil, according to the kind and character of the plant. The tying encourages an upright compact habit, and the centre of the plant is thus enabled to rise well—in fact, the tying effects the first processes of blanching. Tying tightly will be apt to squeeze the plant as it grows, and prevent the acentre of the plant rising freely. After tying and watering,

an inch or so of soil from the sides is thrown over the bed to keep the moisture in. Before there is much frost, the plants will all need securing by earthing-up.

Planted the main piece for spring Cabbage, and covered a nice piece of Dwarf Kidney Beans with old sashes, resting on rails laid on high pots back and front. A little long litter placed back and front will enable us to have free gatherings for some time. Scarlet Runners are still loaded, and as the weather is again much warmer, though stormy, they may bear well for some time. We have several times preserved them longer by running a rough twisted straw rope over the rows, which thus so far arrested free radiation of heat.

FRUIT GARDEN.

We always think that long-keeping Apples and Pears are more apt to shrivel as they ripen when gathered prematurely. This has been a rather uncertain season for the ripening of fruit, some coming before and others after their usual time. As rain was expected, we put a pinch of soot on the surface soil of the Strawberry pots. This helps the growing and ripening of the plants, but too much of such hot manure would be injurious.

ORNAMENTAL DEPARTMENT.

The Iresines are as fine as they were two months ago; and though we like *Herbstii* for some purposes, *Lindenii*, from being much stronger-growing and standing nipping well, is our best favourite. We have used it in ribbon fashion between strong-growing yellow *Calceolaria* and white *Pelargonium*, and the effect has pleased us much more than did the brown *Coleus* last year. It seems likely to last almost as long as the *Calceolaria*, which after the gales as yet have suffered but little.

Got some long litter and mats in readiness to throw over late cuttings. Cuttings of variegated *Geraniums*, *Verbenas*, &c., would be all the better of a little sweet bottom heat, even if air were admitted by leaving open from a quarter to half an inch at the back of the light all night. This is the great secret for preventing damping. With a moist atmosphere and the light close, cuttings will stand a good amount of direct sunshine during the day, better than a close confined atmosphere at night.

Roses.—In equinoctial gales it is advisable to shorten young Rose shoots considerably, so that they may act not too much as a leverage on the roots.

Chrysanthemums in pots intended for house decoration should be richly top-dressed. We shall get ours staked securely, using chiefly one stake, and place them where they can have a little protection. As mass of bloom is our object, we thin the buds but little; but when we used to grow for fine flowers we thinned the buds very much.

Climbers and strong-growing plants in conservatories and other plant houses must now be regulated and thinned, that greater light may reach the plants beneath. As soon as possible we shall have a regular glass-washing. We can rarely get at it in general more than twice a-year, now and in spring.

—R. F.

TRADE CATALOGUES RECEIVED.

Downie, Laird, & Laing, Stanstead Park, Forest Hill, London.—*Catalogue of Dutch Flower Roots*.

John Harrison, Grange Nursery, Darlington.—*Catalogue of Roses and Hollyhocks*.

TO CORRESPONDENTS.

N.B.—Many questions must remain unanswered until next week.

BOOK ON BRITISH FUNGI (*Flora*).—There are two Fungus floras published, one Cooke's "Handbook of British Fungi," two vols. Macmillan & Co., 24s. This is a new book, and describes every known British Fungus at length, with a woodcut of a typical species of every genus. The other is Berkeley's "Outlines of British Fungology," one vol., Reece & Co., Henrietta Street, Covent Garden, 30s. This is ten years older, and does not give full descriptions of the microscopic species; it, however, has the great advantage of twenty-four pages of excellent coloured plates. In their way both books are equally valuable.

AMPELOPSIS (*J. C. L.*).—Every species of the genus can be raised either from layers or cuttings. You can have the "Cottage Gardeners' Dictionary" free by post from our office if you enclose 7s. 2d. with your address.

SEEDLING VERBENAS (*W. D. E.*).—No award.

PEACHES ON BACK WALL versus ON ROOF TRELLIS (*Kew*).—By keeping the roof clear, so as to admit light to the trees on the back wall, the fruit is quite as fine and large as that from trees on a trellis at 14 inches from the glass. Distance from the glass is no object, so long as the sun's rays reach the trees on the back wall unobstructed. There is no more difference between the fruit at the lower part of the back wall than is usual on the lower branches of all fruit trees. All have smaller fruit on the lower branches. Keep the trees on the front trellis to the height shown in the section, page 193, and the pot trees, as well as those on the back wall, will have all the light

needed for the growth of fruit fully as fine as that on the front trellis; in fact, during the past two seasons with us they have been finer. The case is different when the roof is covered with trees, and the pot trees and those on the back wall are as much in obscurity as if Ferns were to be grown. Peaches cannot have too much light and air, with the needful temperature. These conditions secured, the fruit is as fine at 10 feet as at 1 foot from the glass. —G. A.

WINTERING STEPHANOTIS FLORIBUNDA (J. J. P.).—Do not stop the shoot still growing. Its growth will tend to keep up healthy root action, but we should now only give water sufficient to keep the leaves from becoming limp. If kept dry it will endure a temperature of 45°, or even 50°. The tiny little shoots showing themselves at some of the joints will probably be trusses of bloom next summer. Though the *Stephanotis* will endure a comparatively low temperature, we have six plants of it in our stove, four on the roof trellis, and they have flowered twice this year—viz., in May, and from August up to the present time. They are planted out.

MELONS ON DEAD PLANTS (Q.).—Cut them; they will not be benefited by hanging on the plant. Place them in the warminery where Muscat Grapes are ripening, and they will come to maturity, but the flavour will be poor.

PLANTING TACSONIA VAN-VOUXEIMI AND LAPAGERIA ROSEA (B. B.).—We have no experience of these in an outside border, and we think the *Lapageria* would not succeed, as shoots are continually thrown up from the collar of the plant, and will have to be introduced through the opening in the wall, which will create considerable trouble. Beyond that we do not see any objection if the stems be protected from frost. You will need to look carefully for snails and slugs, as they are very fond of the young shoots of the *Lapageria*. It needs peat soil, well drained, and an abundant supply of water. The *Tacsonia* succeeds well in any good loamy soil, light rather than heavy, with a little leaf soil or manure. Ours are planted inside, but to-day, in removing the soil in front of the greenhouse, we found the soil to a depth of 2 feet, and how much deeper we do not know, white with the roots of *Tacsonias*, *Passifloras*, &c., which had come through beneath the walls.

LARGE-CROWNED PINE APPLES (A Young Pine-Apple Grower).—We do not know in what way you can check the growth of the crowns without checking the swelling of the fruit. The chief cause of large crowns is weakly growth of the plant. The only remedy we know is to grow the plants thinly, and near the glass—they cannot be too near it, so long as the leaves do not touch. That, and admitting air freely, so as not to draw the plants up weakly, will give you sturdy plants, and large fruit with comparatively small crowns.

SURFACING POTS WITH MOSSES (A. D.).—The Palms you propose using for table-decoration may have the soil covered with *Selaginella denticulata*, a dwarf close-growing sort, or the still dwafier *S. apoda* (densa), removing them with about an inch of soil from the pots or pans in which they are growing, and placing them on the surface of the soil in the pots containing the Palms. The Mosses will impart a cheerful appearance, and will not injure the Palms. Remove the Mosses when the Palms are growing.

CUTTING-DOWN ABUTILON THOMPSONI (Idem).—We cut off the tops of our *Abutilon Thompsoni* now, and make cuttings of them about 4 inches long, which strike freely in gentle heat, and become good plants for next season. The old plants are placed in a cool stove or warm greenhouse, and afford cuttings again in February or early in March. For a plant for the greenhouse, the best time to cut-back is at the end of February or beginning of March. The *Stephanotis* is not drawn more than ours, which we do not consider at all affected. Train the shoots to a trellis, and allow them to grow, only do not give more water in winter than sufficient to keep the leaves from flagging.

BONES FOR MANURE (Amateur).—As you object to sulphuric acid, which is far from expensive, and as caustic potash is dearer, there is no mode for you to adopt but having them broken into very small fragments.

VINES—SHOWING PLANTS (A. McK.).—You could not grow Vines in your kitchen; there would not be sufficient light. There is no book on growing plants for exhibition. "Florists' Flowers," which you can have free by post from our office if you enclose five penny postage stamps with your address, probably states what you wish to know.

STORING APPLES AND PEARS (A. F.).—Dry straw beneath them will do no harm, but is not needed if they are placed, as they should be, in single layers. Storing in heaps is the worst of all modes; the pressure produces bruises, and heating is occasioned.

SELECT DAHLIAS (O. J. K. Preston).—Andrew Dodds, dark maroon; Annie Neville, white; Caroline Tetterill, white, tipped deep lilac; Charles Backhouse, scarlet; Charlotte Doring, white ground, edged and tipped; Criterion, delicate rose; Edward Spary, dark claret; Fanny Purchase, bright yellow; Harriett Tetterill, bluish, margined with dark purple; James Cocker, purple; John Harrison, dark maroon; King of Primroses, primrose; Leah, golden yellow; Lord Derby, rosy crimson; Memorial, pale rose; Mrs. Houshaw, white; Netty Buckell, light bluish, tinted pink; Pretender, lilac; Sam Naylor, buff; Toison d'Or, golden yellow; and Vice-President, bright orange.

MANAGING VINES (St. Brigit).—It is very bad management to allow the Vines to grow wild in the way you have done. You should have thinned-out and stopped the shoots when they required it; the bearing wood should have been fully exposed to the sun to ripen, and space ought to be allowed for the full development of the leaves. Cut out the wood where it is crowded at once. This will let the light into the plants underneath, and at the same time be beneficial to the Vines. There is no autumn-flowering yellow *Crocus*; violet and blue are the prevailing colours of the autumn species.

GRAPE VINES NEGLECTED—PRUNING APPLE TREES (F. C. H.).—We once took charge of a vine in a similar plight to yours. Every leaf and shoot was smothered with mildew, and we were informed that the Vine had not ripened a crop for twenty years. The house measured about 15 feet by 10 feet, and contained only one Vine. It was pruned, as you propose, on the short-spur system in November. All the woodwork of the house was washed with warm water, in which just a little soft soap had been dissolved. The wood of the Vine was painted with soft soap dissolved in water, which was thickened with flowers of sulphur. The roots were next examined. The border was found to be in bad condition, few large roots were found, and scarcely any of a fibrous nature. The border had to be renewed, and the long bare roots were lifted up near the surface among the fresh compost. The house was kept cool all the winter, and the Vines allowed to break naturally in the spring. A few bunches only were obtained the first year, but there was no mildew, and the wood ripened well, and two or three young canes were trained up from the bottom. The following season the Vine carried and ripened about one hundred nice bunches. We would thin out the young shoots of the Apple trees, and shorten those that remain. Good dwarf bushes may thus be obtained in a year or two.

VINE LEAF DISCOLOURED (J. Booth).—There is nothing wrong with the Vine leaf sent. It has only taken on the flush of age. Some varieties assume the tinge of the leaf sent a considerable time before they fall off.

GRAPES NOT COLOURING (A Young Beginner).—The reason that your Grapes do not colour is that the Vines are overcropped; they had previously borne heavily, and now you have from twenty to twenty-five bunches to a rod. The berries on the Lady Downe's are what is termed scalded; this occurs at the time the fruit begins to change colour. Opening the ventilators to their full extent at that time will prevent it. Cut out all the injured berries, there will then be no danger of any more of them becoming affected.

GARDEN FRAME (Subscriber from the First).—We are obliged by your communication. We have not seen the frame; when we have, and if we consider it novel and good, we will notice it.

TUBULAR BOILER (A Hot-water Engineer).—If some friend would register your invention in your name you might afterwards offer it to your employer.

GOLDEN CHAMPION GRAPE SPOTTED—MADRESFIELD COURT WITHOUT BLOOM (Cliftonensis).—The spot on the berries of Golden Champion is constitutional; either on its own roots or inarched on another sort it is still present. There is no remedy for it. Inarching the Vine on Gros Colman would not account for the absence of bloom. It must have been the syringing. We never syringe the Vines after they are fairly started into growth.

PLANTING A VINERY (I. M.).—Gros Colman is a very good late Grape, its berries are very large and carry a fine bloom. We advise you to plant one of it. It always commands a very high price in the market. It will succeed very well in the same house with the sorts you name. The White Lady Downe's is a good late Grape, but we do not consider it equal in every respect to the black variety. You do right to plant Vines on both sides of your span-roofed house. If you grow only one cane to a Vine you should plant them 2 feet 9 inches apart. In your house two canes to each Vine would be better; then you should plant 5 feet 6 inches apart. Your selection of varieties is very good.

RENT FOR GARDEN (G. G.).—We cannot give an opinion, not knowing anything about the locality. You had better consult some nurseryman in your county.

FRENCH NURSERY (E. K.).—Apply to some of the principal nurserymen who advertise in our columns, and if they have correspondents in France they can help you.

CANNA FLOWERING OUT-DOORS (D. M.).—It is not uncommon for Cannas to flower out-doors, and usually in the second season, as yours have done this season from seed sown last year.

THINNING CAMELLIA BUDS (J. K.).—Your plants with five or more buds to a shoot ought to be at once thinned to one or at most two buds to each shoot. Too many buds weaken the plants, and the flowers are individually small when more than one flower is allowed to a shoot, but a strong shoot may be allowed two flowers.

TREATMENT OF BULBS (A Lover of Flowers).—We presume yours are the usual class of bulbs—i.e., Hyacinths, Narcissus, Tulips, Crocuses, &c. In this case you will pot them at once in good, rich, light, turfy loam two parts, one part leaf soil, and a half part rotten manure, and a sixth of sharp sand, the whole well mixed. Drain the pots well, employing 6-inch pots, which are most convenient, put one bulb of Hyacinth or Narcissus in a pot; or if the bulbs are small you may put three in a 7-inch pot; five or six Tulips or Crocuses in a 6-inch pot. The Hyacinths and Narcissus should have the bulbs no more than half buried in the soil, the Tulips covered level with the neck, and the Crocuses covered about an inch. After potting stand in the cold frame on coal ashes, and fill in the interstices between the pots with ashes. Some cover them with ashes a few inches deep. Cocoa-nut fibre is, however, a lighter and better material, and with that we advise their being covered 3 inches deep. Ashes will, however, do if the material named is not at hand. Expose the frame fully in all mild and dry weather, using the lights only in rainy weather and severe frost. The plants ought not to remain covered more than six weeks, then half your stock should be removed to the greenhouse, assigning them a light and airy position, and with attention to watering they will flower in due course. Those left in the frame should have the covering material removed, but still be plunged in the ashes, and about a month after the others they may be drafted into the greenhouse, forming a succession to the rest. The pots should be clean washed on their being removed from the frame. The plants must not be overwatered but kept moist, not giving any water, however, until it is required, then a good supply. When the flower-spikes or buds appear, every alternate watering may be of liquid manure, 1 oz. of guano to a gallon of water being good.

WINTERING BEDDING PLANTS IN AN ATTIC (St. Edmund).—We fear your chance of wintering Geraniums and Verbenas with *Calceolarias* in a loft or attic is very small, especially if the winter be at all severe. It is too late to strike cuttings unless you have heat. If you are disposed to give the plants a trial, we should have the plants taken up now and potted in light loamy soil with a little leaf soil, about one-third of the whole, and pot them in as small pots as will hold the roots comfortably. Water if the soil be dry, but if it be moist they will not require water for some days after potting; do not give them any so long as the soil is moist, and when dry only a little to keep them fresh. Afford all the air you can in mild weather, and when severe you will need to cover-up the plants if the temperature of the attic fall to 33°, to keep it from falling below 32°. The covering should remain over the plants until the weather becomes mild. All decayed and decaying leaves should be kept picked off, and should the winter not be severe, you may keep some of them safely; but your chances would have been greater had you put in cuttings in August, and had them well established before winter, especially the Verbenas and Geraniums. *Calceolarias* are best wintered in a frame, the cuttings being put in before they are frosted in October. We presume your attic is provided with light.

TRANSPLANTING EVERGREENS (J. H. E.).—The best time for the transplanting of evergreens, especially Hollies, is the last half of September, and it may be quite safely performed up to the middle of November, after which the ground is usually so cold and wet as to render planting undesirable. The earlier evergreens are planted late in summer and autumn, the more complete growth, the greater is the prospect of their becoming rooted before winter. Next to late summer or early-autumn planting, the beginning of April up to May in showery weather is a good time, better than when the ground is cold and wet, and no stimulus to the emission of roots given by the warmth of the atmosphere and soil.

CLEMATIS JACKMANNI (Sunny).—You will not require to cut the plants down, but cut away the dead parts in spring before growth takes place, disposing the shoots equally over the trellis. It will be well to cover the roots

with litter, but we should prefer well-rotted manure and leaf soil, applied as a mulching about 3 inches thick.

MANURE WATER FOR PAMPAS GRASS AND CHRYSANTHEMUMS (E. M. R.).—To your Pampas Grass with fifty plumes we should not, after the heavy rains we have so recently experienced, apply guano water. It should have been given to it during summer whilst the plant was growing freely, and until the plumes were clear of the sheaths. Six gallons to a plant as large as yours is not too much, and once or twice a-week according to the weather. One ounce of guano to a gallon of water is sufficiently strong. You may give the Chrysanthemums the guano water at the same strength, until the flowers expanding, at every alternate watering.

IVES FOR COVERING CHURCH WALLS (W. D. S.).—These have fine large leaves and grow freely:—*Hedera canariensis* (Irish Ivy), *H. Helix* (English Ivy), *H. digitata*, and *H. Ragneriana*. *H. Helix aurea* is golden variegated, *H. Helix elegans* is white variegated. *H. Helix chrysophylla* has green leaves, some blotched with yellow. *H. Helix foliis variegatis* is the old white-variegated, well suited to give buildings an antique appearance. All these we advise, employing the green kinds for the main flat surface coverings, and the variegated for the projections. We know a church so covered on the North, east, and west aspect, the south being clothed with *Cotoneaster microphylla*, which in winter and early spring is very effective with its bright red berries. We advise it, *Crataegus Pyracantha*, *Escallonia macrantha*, *Garrya elliptica*, and *Ligustrum japonicum* for the south aspect. All are evergreens. The soil will answer well, adding some well-rotted manure, leaf soil, and fibrous loam. Rubens, Tea-scented Rose, is good, rose and white, but we fear it will not be sufficiently vigorous for a climber for a greenhouse. We should prefer *Maréchal Niel*.

PANSY SEEDLING (F. L.).—It is a large flower, but not sufficiently differing from others well known to render it valuable. The varieties now are legion.

GRUBS AND SLUGS (Alfred).—Use both gas lime and quicklime. Point the first-named into the soil so as to mix it with the upper 2 inches of the surface. Sprinkle the quicklime on the surface on two or three successive evenings.

STOVE-HEATING A SMALL GREENHOUSE (Angora).—We have no doubt that the stoves you refer to would answer your purpose. The stoves referred to by our contributor can be seen at most ironmongers. No stove will be secure without a chimney. A 3½-inch metal pipe going-up 18-inches beyond your roof with a cap over it to keep wet from going in freely, will do well. We have a round iron stove costing with elbow £3 10s. We have the stove sunk mostly below the ground level with an open space round it. We take a 2-feet-long horizontal pipe from the stove, and the end enters and rests on a square cesspool of bricks above the ground. We put two pieces of iron across this cesspool, and on that we rest a common water pipe, 3 inches in diameter and 9 feet long, for a chimney. We cover the cesspool with bricks and mortar, take a square of glass out for the pipe to go out, fill with a square of zinc, having a suitable hole to let the pipe through, and tie a piece of zinc over the end of the pipe as a cover, leaving room at two sides for the smoke.

BUSH PEAR TREES NOT SUCCEEDING (D. F. J. K.).—No doubt the firm that supplied you sent varieties which usually do succeed under circumstances similar to yours, but there is no fruit so variable and eccentric in its character as the Pear. A variety will do well in one garden, and under apparently similar conditions it will not thrive in a neighbouring one. Give your trees another chance, and those varieties which are worthless with you may be regretted with sorts that succeed in your garden. If you plant any against the wall it will be better to purchase trees trained for this purpose; they may be had at the nurseries at a slightly higher rate than bush trees. You ought to plant *Coe's Golden Drop* Plum against a wall. *Louise Bonne* Pear usually does well as a bush or pyramid on the Quince. In all probability the *Bigarré Noir de Schmidt* would succeed with you on a wall, with a south or west aspect.

BLACK HAMBURG NOT BEARING (An Amateur).—If your Vine has been growing many years undisturbed in one position, the active rootlets must have travelled a long way from the main stem. You ought to apply the dressing to those rootlets. Now is the best time to do it. We advise you to cut out some of the old branches and train-up a few young rods to take their place; these, if strong and well ripened, will bear fruit the following season. In pruning the old rods do not cut the young wood which they made this year too closely back, leave two or three eyes at the base of each. In spring all these eyes will start into growth, when you can select the best and rub off the others.

SELECTION OF VINES (H.).—You may grow the Vines you name in one house. Plant Muscat of Alexandria and Alicante at the warmest end; they require more heat and take longer to ripen than the others. We should omit Golden Champion from your list. It is always better to plant such varieties as Muscat of Alexandria, Alicante, and Lady Downe's in a compartment by themselves. Black Hamburg, Muscat Hamburg, and Buckland Sweetwater will do well together.

NAMES OF INSECTS (Harmondsworth).—The caterpillar on the Rose leaf is the larva of the Yellow-tailed moth, *Euproctis auriflua*. There is a description and portraits in the first volume of our new series, page 141. (*C. Subscriber*).—Not one was in the tin box, nor in the envelope.

NAMES OF FRUITS (Goddess).—Your Pear is *Jersey Gratioli*.
NAMES OF PLANTS (W. E. C.).—Cannot name from leaf only. (*G. Wall*).
1, *Silene Armeria*; 2, *Mentha hirsuta*; 3, *Pimpinella magna*. (*A Lady Subscriber*).—*Acanthus mollis* is a spinosus. (*W. L.*).—1, Perhaps *Salvia argentea*, but the specimen is too imperfect; 2, *Veronica salicifolia*, apparently. (*E. J. W.*).—1, *Geranium sanguineum*; 2, *A. Verbasum*. If you will send again a better specimen we will try and determine the species. (*M. G.*).—We cannot name plants from their leaves only. (*A. A.*).—We believe it to be *Osmanthus aquifolius*, a native of Japan. (*Theo*).—There were two parcels bearing the same postmark, and the plants tied in bunches with similar thread. If you send six specimens we will endeavour to name them.

POULTRY, BEE, AND PIGEON CHRONICLE.

FEATHER-EATING POULTRY.

I READ with the greatest interest the article by Mr. L. Wright upon "Feather-eating," and my experience, although infinitely small in comparison, confirms the fact—to me at least—that lettuce does, in some manner at any rate, ward off this worst of

bad habits. I kept for considerably more than two years from forty to fifty Houdan fowls in, I am aware, very far too limited a space for health, generally speaking with no grass run whatever, with not one case of feather-eating, and with only one death from disease in that period. It proceeded from enlarged liver.

I have always attributed my success to the following treatment—viz., first and all-important, unlimited supply of green food, consisting as much as possible of lettuce run to seed. This I found not difficult to obtain at almost any season by having all the thinnings-out from the garden stuck into any spare corner on purpose for the fowls; indeed I may say I never saw them without, that I did not myself throw in some pulled up by the roots, soil and all, and I never saw them hurt, but greatly benefited thereby. They also had always nearly a couple of turnips cut in two to peck at and amuse themselves with when not feeding. The yard was dug over once a-week, giving plenty of entertainment for that day at least in searching for worms, grubs, &c. This was the only animal food they had, with the exception of any small quantities of soup there might happen occasionally to be from the kitchen to mix their soft food with. The roosting-houses, perches, and dust baths were sprinkled with flowers of sulphur once a-week also, and I never saw them in the slightest degree tormented with vermin.

But I am straying from the subject particularly under notice, so it is time I ended; and if my small experience interests or benefits anyone I shall be glad. In the meantime, if my fowls ever take to feather-eating I shall not forget Mr. L. Wright's letter and experiments.—A SCOTCH LASSIE.

THE CRYSTAL PALACE POULTRY SHOW.

ALL poultry-breeders will, I suppose, unite in considering the Crystal Palace schedule as everything that is desirable; it is, therefore, of little use, possibly, for a poor outsider, an admirer of a little-cared-for breed, to growl-out his regrets and point out the blots. Let us look at the by-gones of the new era of Palace Shows. In January, 1870, Malays were in the Variety class, three pens being entered, and all noticed. Silkies had four entries. White Dorkings, with £3 10s. offered to hens, had only six entries; White Cochins hens, with £3 10s. offered, four entries; Golden-spangled Hamburg cocks six entries; hens only four! each class with three prizes of the same value. Silver-pencilled cocks and their mates in each class three prizes of the same value, with four entries in each; Black Hamburgs, with only three cocks and six hen entries; Duckwing Game hens, £5 in prizes, five entries. It may fairly be said that with the slight encouragement of a scramble for the variety prizes, the Malays had at least entered respectably, as also had the Silkies, and that therefore in an extended prize list these two breeds should have received some decided encouragement. Well, what happened? I believe, and think I am stating the facts, the Committee demurred to offer a class to Malays, but yielded the point on obtaining a promise of a portion from a liberal Malay fancier. Now, simple justice would have demanded that demurring to offer prizes to Malays and Silkies, the Crystal Palace Committee should have also lessened or omitted the prizes to the classes which I have noted above.

Let us look, then, at Catalogue No. 2, December, 1870. Thanks to the liberality of the Malay-breeder, who deserves honourable mention, we had a class for Malay chickens, with £3 10s. prizes and nine entries. Not so bad, methinks—in fact, with the amount given the Committee were in pocket considerably. Let us look at the other breeds, what of them? Silkies in the Variety class had gone down to two entries. No wonder. White Dorkings, made into a cock and hen class, with £5, had fourteen entries. White Cochins treated in the same fashion had fifteen entries; and the other breeds all treated in the same way entered rather above these numbers. There were two classes, marked exceptions; Brown Red Game hen, with £5 prizes, had only eight entries, whilst, wonderful to relate, the class for Buff Cochins cock and hen (aged) had actually only five entries.

Now, in all these classes there was an additional chance of a silver cup, not offered to the Malays, and I contend that, considering all this, the Malays paid the Committee better than many of the classes, and deserved at their hands decided encouragement.

Let us pass on to 1871, what do we find? Malays offered just the same amount (I think, but the catalogue of 1871 is no longer a guide to the amount of prizes offered), no increase of classes, but old and young birds pushed in together; still, though hardly treated, the Malays mustered seven pens. Some of the other classes had the following entries:—Cuckoo Dorking, a new class, four entries; aged Buff Cochins, nine; Silver Buff, a new class, two; White Cochins, aged, eight; Spanish, aged hens, seven; Silver-pencilled Hamburg cock and hen, eight; Black ditto, nine; White-crested Black Polish, seven.

And now I come to the brilliant (for such an amount of silver deserves the adjective) schedule of 1872. What does it say? Cuckoo Dorkings omitted? No, offered the same amount.

Aged Buff Cochins cut out altogether. Fancy that! No, my spectacles have fallen off. Can it be? Surely, yes. Ah, now I see. A £5 5s. silver cup, and two classes instead of one, with £3 10s. in each. Jolly times, say I to myself, for the Malays, then. Hurrah for Crystal Palace! White Cochins one class, but a silver cup all to themselves. Silver-pencilled Hamburgs two classes, and a chance of silver cup in each. Well, this is, as the horrible slang of the present young generation, male, and alas! female, has it, awfully jolly; and I go on, and receive a startling check, for next come Black Hamburgs, which beat the entries of the Silver-pencilled last year, and they remain as they were! This is by the rule of "as we please." Well, but then I am not naturally desponding, and at the Polish classes my hopes are again up to blood heat, if not beyond. The three varieties have each two classes, even White-crested Black, which last year just equalled the Malays. A silver cup, too, all for the Polish. Malays—what? for the contending emotions of anger and disappointment make me feel as if the ground was slipping away from me. By degrees I recover myself sufficiently to read the utter collapse of my hopes. Malays, cock and hen, 30s., 15s., 10s. Well, this is the "march of intellect" with a vengeance. Injury and insult in one dose! Better far the chance of the "Any other variety" class than this beggarly offer, say I; and if all the Malay-breeders feel it as I do, let there be no entries at all. I certainly shall not touch the class as it now stands. Silkies, halloo! silver cup "offered by a few breeders," I suppose. Not a bit of it, offered by the Committee, and two prizes as well, the second being 5s. more than the Malay. By this time I am bereft of understanding, and much as there is besides to notice, as the song says, "O'erwhelmed with contending emotions," I can only subscribe myself—Y. B. A. Z.

THE PRODUCTION OF EGGS.

Our highly-bred and prize fowls, while they excel in many respects, incline, in the case of some breeds at least, to produce fewer and less fertile eggs than their less pretentious neighbours. Nor can we wonder at it; for our poultry-breeders, in their eagerness to please the eye, sacrifice the more useful qualities to beauty, grace, or other fancy points.

The remedy is simple. In selecting birds for breeding stock, accept only such as compare favourably, as layers, with other birds of the same variety, and reject poor or indifferent layers, no matter how fine they may be in some other respects. In the next place let our poultry societies require of exhibitors that they furnish a correct report as to the fecundity of the stock shown, and instruct the judges to give some consideration, however slight, to this matter. Such a course of action would do much toward raising pure-bred poultry to a higher standard of utility than they have yet attained.

Besides the selection of extra layers to breed from, there are one or two tricks of the trade to which we may resort in order to promote the laying of eggs; such as removing two or three times a-day the eggs already laid. In their undomesticated state fowls lay, at each litter, only so many eggs as can be safely covered and kept at the required temperature; but if all the eggs, except one or two for nest eggs, be removed, taking pains not to disturb the birds and the nest, then Nature tries to compensate the loss, and make up the original number.

A case in point came to our notice not long since. A Golden-winged Woodpecker prepared her nest and laid her full number, eight in all. Seven of them were then quietly removed, and the next day she laid another egg. Each day an egg was laid and an egg removed, until the poor bird had produced no less than twenty-four eggs at a litter, or just three times as many as she would have laid if left to herself.

Farmers well know that when a hen steals her nest she seldom lays more than fifteen eggs before she begins to sit; yet when laying in the house, the eggs being removed each day, four times that number are frequently laid in one litter. We conclude, therefore, that the production of eggs is to some extent voluntary, and that fowls incline to adapt themselves to circumstances; so while we would not wish to lose sight of the fancy points already attained, we trust breeders will endeavour to surround their breeding stock with such circumstances as are calculated to encourage the increased production of eggs.—(*American Poultry World*.)

IPSWICH POULTRY SHOW.—In consequence of so few entries being made, the time for their being finally closed has been extended to October 7th. We fear it is becoming the rule for exhibitors to defer entering till the last moment, a practice which gives little time to make arrangements for the comforts of the birds.

NEWCASTLE-UPON-TYNE POULTRY, PIGEON, AND CANARY SHOW.—We wish to call the attention of exhibitors to the schedule of prizes of this Society, to be held on the 7th and 8th November next. For the first time classes for poultry have been introduced,

with money prizes, gold medals, and silver cups, for both adults and chickens in a comprehensive list. The Pigeon department, as hitherto warranted by the success of previous meetings, is also liberally dealt with. In Carriers, Pouters, Short-faced Tumblers, and Barbs, the classification is for single birds, cock and hen respectively; while in the remaining classes single birds also of each variety compete together, *cock or hen*. This arrangement will enable fanciers who could not send a well-matched pair to exhibit advantageously. The Canary classes are also very numerous, with money prizes and silver medals. No less than fourteen silver cups and eighty gold medals are offered, winners of the gold medals having the option of the value in money. The Exhibition is to be held in the Corn Exchange, allowing ample space to place all the specimens on the same level. The able Committee, with Mr. H. O. Blenkinsop again taking the secretaryship, will ensure good care for the specimens. The entries close on the 12th of October.

CHESHIRE AGRICULTURAL SOCIETY'S POULTRY SHOW.

THIS was held at Chester on the 17th ult. All poultry exhibited were to have been hatched on or after January 1st, 1872. The following is the list of awards:—

LOCAL FUND.

DORKINGS.—*Grey*.—1, T. E. Kell, Wetherby, Yorkshire. 2, J. Somerville, Chirk. *White*.—1, E. Shaw, Plas Wilmot, Oswestry. 2, Miss E. Williams, Henllys Bettwyl.

SPANISH.—1 and 2, Miss Davies, Chester.

COCHINS.—1, E. Tudman, Whitchurch. 2, W. Edwards, Eccleston.

HAMBURGS.—1, R. Beckett, Hartford, Northwich. 2, No competition.

BRAHMAS.—1, T. F. Ansdell, Cowley Mount, St. Helens. 2, J. Finchett, jun., Chester.

GAME.—1, A. M. Dunlop, Aston, Preston Brook. 2, J. Dickson & Sons, Chester. *Cockered*.—1, G. C. Barnett, Birkenhead. 2, No competition.

POLISH.—1, P. Unsworth, Lovton, Newton-le-Willows. 2, No competition.

BANTAMS.—1, R. Ashley, Nantwich. 2, R. H. Ashton, Mottram, Manchester.

GEESSE.—1, T. Farish, Frodsham. 2, J. Lycett, Stafford.

DUCKS.—1, G. Moss, Moreton, Birkenhead. 2, Mrs. M. Hornby, Darnhall.

TURKEYS.—1, R. Beckett, Hartford, Northwich. 2, E. Shaw, Plas Wilmot, Oswestry.

The Judges were Mr. Douglas, Clumber; and Mr. C. A. Bowles, Chester.

ECCLESFIELD (SHEFFIELD) POULTRY SHOW.

THE annual Show of the Ecclesfield Farmers' Club was held on the 26th ult. An augmentation of the prize list has led to an increase in the number of entries; and although on this occasion the day was fine, there is little doubt but that for future shows a tent will be provided.

Dorkings were first on the list; excellent Dark-Grey chickens took both prizes. The first-prize pair of *Spanish* were adult birds in capital order, and the second prize went to a very promising pair of chickens. In *Cochins* the first-prize birds were Partridge chickens, which were well grown and capital in colour, and the second a pair of Buffs, the hen in which pen was almost as perfect as we have seen this season. *Brahmas* were a comparatively large class, and the birds good, the first prize going to an excellent pair of Dark chickens, and the second to Light ones. *Game* were the most wretched class in the Show, scarcely a bird being worthy of notice. The classes for *Hamburgs* were mixed, a system we cannot too heartily condemn, as these birds are well worthy of separate classes, and will amply repay the outlay in entry fees. The birds in these classes were only of moderate quality. A splendid pair of Silver *Polands* were first in that class, and good Blacks second. In the Variety class *Crève-Cœurs* were first and Houdans second. *Game Bantams* were a very bad class, but the other Bantams made amends. The first prize in the latter class went to a handsome pen of Blacks, and the second to Silver Sebrights. Many excellent pens of both varieties were highly commended.

Turkeys and *Geese* were but moderate, but the *Ducks*, which were all in one class, were very good. The first-prize Aylesburys were exceedingly fine in all respects. In the Selling class Golden-pencilled chickens were first, and adult *Spanish* second.

In the *Pigeon* classes there were some good birds, but the entries were not large. The winning Carriers were respectively Blacks and Duns. In Tumblers the first prize went to Almonds and the second to Black Mottles. The first-prize Fantails were a nice pair. The Antwerps were very good, Silver Duns being first and Red Chequers second; and in Jacobins Reds were first and Yellows second, both pairs being very good in all points. In the Variety class very good White Barbs stood first, and a capital pair of Spangled Ice Pigeons second.

There were but two classes for *Rabbits*—viz., one for colour, in which a Black-and-white won first and a Fawn second; and one for weight, in which the first weighed 13 lbs., and the second 12 lbs. 7 ozs.

DORKINGS.—1 and 2, W. Harvey, Sheffield. c, E. Temple, Pitsmoor.

SPANISH.—1, Burch & Bouter, Sheffield. 2, E. Brown, Sheffield. *hc* Burch and Bouter; W. Harvey.

COCHIN-CHINA.—1 and 2, W. Harvey.

BRAHMA.—1, J. Earnshaw, Rotherham. 2, W. Harvey. *hc*, J. Earnshaw; G.

Palfreyman, jun., Heeley, Sheffield; W. Whiteley, Sheffield (2); W. Harvey, c, J. Thomson, Sheffield; G. Palfreyman, jun.
GAME.—1, C. Travis, Thurgold; 2, B. Burton. c, J. Holling, Pilley.
HAMBURGS.—*Golden-pencilled or Spangled.*—1, W. Harvey. 2, R. H. Ashton.
Mottram, Manchester. hc, Burch & Boulter (2). Silver-pencilled or Spangled.
 —1, T. H. Turner, Heeley. 2, W. Harvey. hc, Ashton & Booth, Broadbottom, Mottram. c, Crookes & Booth, Sheffield.
POLAND.—1 and hc, W. Harvey. 2, J. Battie, Holmfirth. c, W. Silvester, Sheffield.

BANTAMS.—*Game.*—1, W. Harvey. 2, M. Mosforth, Shiregreen. *Any other variety.*—1, R. H. Ashton. 2, M. Leno, Dunstable. hc, Burch & Boulter (2); W. Harvey; M. Leno.

ANY OTHER VARIETY.—1 and hc, W. Harvey. 2, J. Heely, Hepworth.

TURKEYS.—1, W. Shaw. 2, Mrs. Booth, Bingham.

GESE.—1 and hc, J. K. Straw, Shiregreen. 2, W. Shaw.

Ducks.—1, J. Shillito, Pilsnort. 2, C. Brown, Attercliffe Common. hc, G. C. Armistage, Stanning; W. H. Strouts, Grenoside. c, W. Shaw; J. K. Straw.

SELLING CLASS.—1 and 2, Burch & Boulter. hc, C. Travis; W. Harvey. c, J. Heeley.

PIGEONS.

CARRIERS.—1, W. Harvey. 2, H. Yardley, Birmingham. hc, E. Brown; W. Lumb, Rochdale.

TUMBLERS.—1, W. Harvey. 2, H. Yardley. hc, E. Brown; W. Lumb.

FANTAILS.—1, H. Yardley. 2, J. Smithers, Sheffield.

ANTWERPS.—1, W. Harvey. 2, W. Lumb. vhc, J. Thornton, Ecclesfield. hc, A. Smith, Ecclesfield. c, W. Thornton, Ecclesfield.

JACOBIANS.—1, W. Harvey. 2, J. Smithers. hc, H. Yardley.

POUTERS.—1, W. Harvey. 2, E. Brown. hc, J. Hallam, Butterthwaite.

ANY OTHER VARIETY.—1, W. Harvey. 2, H. Yardley. hc, W. Harvey (2); W. Lumb.

RABBITS.—*Heaviest.*—1, H. Leadbeater, Sheffield. 2, Shaw & Allinson, Broadhall Park. *Best Colour.*—1, 2, and hc, Shaw & Allinson. c, H. Shaw, Ecclesfield.

JUDGE.—Mr. E. Hutton, Pudsey, Leeds.

OSWESTRY POULTRY SHOW.

OSWESTRY MARKET supplies a greater amount of poultry for the table than any other town in Shropshire or Wales; buyers constantly attending every market, from districts so far removed as Wolverhampton, Birmingham, Leamington, Bilston, Manchester, Liverpool, and various other towns having large populations. That the prices of poultry for table use have on account of this extreme demand risen at least 50 per cent. during the last thirty or thirty-five years at Oswestry, is a fact well known among the older inhabitants, but the general trade of the town in all branches has proportionably improved, and this annual meeting for the exhibition of strictly fancy as well as really useful poultry begets an excitement few strangers would believe. The Show this year, instead of being under a tent, was luckily held in the Market Hall, consequently the unfortunate weather that prevailed did not affect the fowls.

A very excellent muster of *Game* fowls excited much attention, and many of the *Grey Dorkings* were especially fine, but as of late so common with spurs outside the legs, and others with dark legs were to be met with too frequently. In *Brahmas*, both Light and Dark-feathered, the pens so successful of late at other meetings again took the precedence in classes generally praiseworthy. In *Hamburgs* no one need desire better pens than those shown by the Duke of Sutherland, but the entry was not large, it having oozed out that the Duke would exhibit, which prevented many others entering the lists where success was to them so unlikely. We have seen a far better collection of *Bantams* on former occasions; but the *French* fowls, *Malays*, *Ducks*, *Geese*, and *Turkeys* held a favourable position in comparison to former shows. It was, however, in the *Cochin* classes that this Show was far a-head of all preceding meetings, the Partridge-feathered being not only a large entry, but also containing more really perfect birds than we recollect to have seen at the same time for many years past. Mr. Tudman's four pens all of this variety were the gems of the Show, and were so equally balanced as to quality that a considerable time had to be devoted to the adjudication of the prizes in this division, but the class prizes, a couple of highly commendeds, and the President's silver cup value five guineas falling to the four pens. They were well grown and in most admirable condition.

Although the rain fell incessantly there was not by any means a limited attendance of visitors. The attention paid to the birds shown was worthy of the highest approbation.

GAME.—*Black-breasted Red.*—*Chickens.*—1, E. Smith, Oswestry. 2, Rev. P. G. Bentley, Shrewsbury. hc, P. A. Beck, Gull-field, Welshpool. *Brown-breasted Red.*—*Chickens.*—1, Mason & Winwood. 2, B. Ashby, Nantwich. hc, W. Perrin, Nantwich. c, Rev. P. G. Bentley. *Duckwing Greys and Whites or Piles.*—*Chickens.*—1, Mason & Winwood. 2, E. Shaw, Plas Wilmot, Oswestry.

DORKINGS.—*Chickens.*—1, Mrs. Somerville, Chirk, North Wales. 2, E. Barker, Stokesay. c, J. Cowburn, Maesgarneid, Corwen; Capt. N. Russell, Brydgwyn, Oswestry; Mrs. Somerville.

COCHIN-CHINAS.—*Brown or Partridge.*—*Chickens.*—1 and 2, E. Tudman, Ashgrove, Whitchurch. hc, C. Sidgwick, Kelsall; E. Tudman (2). *White or Buff.*—*Chickens.*—1, C. Sidgwick. 2, R. S. S. Woodgate, Tactbridge Wells. hc, H. Tomlinson, Birmingham; T. Barnett, Walsall.

SPANISH.—*Chickens.*—1, Boulton & Glidden, Bristol. 2, J. Walker, Standeford, Wolverhampton. hc, G. Hurst, Longton; F. Cooper.

BRAMA POOTRA.—*Dark.*—*Chickens.*—1, T. F. Ansell. 2 and hc, Mrs. H. J. Bailey, Reeddale, Tenbury. c, E. Pritchard, Tettenhall, Wolverhampton; H. B. North, Caenarth, Cly. 2, W. B. Etches, Whitchurch, Salop.

BRAMA POOTRA.—*Light.*—*Chickens.*—1, T. A. Dean, Marden, Hereford. 2, Mrs. Long, Forest Hill, London. hc, Miss M. Eytton, Wellington, Salop; T. A. Dean.

HAMBURGS.—*Silver or Gold-pencilled.*—*Chickens.*—1 and 2, Duke of Sutherland. *Silver or Gold-spangled.*—*Chickens.*—1 and 2, Duke of Sutherland. hc, T. Blakeman, Tettenhall, Wolverhampton.

GREY-COCKS.—*Chickens.*—1 and 2, E. Wood, Uttoveter. hc, W. G. Farwell, Tettenhall, Wolverhampton. c, J. Long.

HOUDANS.—*Chickens.*—1 and 2, R. B. Wood. c, E. Williams, Henllys, Berlew.

GAME BANTAMS.—*Chickens.*—1, F. Maitland, Redhill, Worcester. 2, W. Dunning, Newport, Salop. hc and c, A. Ashby, Redhill, Worcester.

BANTAMS.—*Chickens.*—1 and c, R. H. Ashton, Mottram, Manchester. 2, G. Tyley, Morda, Oswestry.

ANY OTHER VARIETY.—*Chickens.*—1, C. Sidgwick (Black Hamburg). 2, Rev. A. G. Brooke, Shrawardine, Salop (Malays). hc, Duke of Sutherland. c, J. Humphreys, West Felton (Manx).

TURKEYS.—1, E. Kendrick, jun., Lichfield. 2 and hc, E. Shaw, Plas Wilmot, Oswestry.

GESE.—1, E. Shaw. 2, G. J. Saunders, Plascerig, Llanyrnech. c, E. Edwards, Ellesmere.

DUCKINGS.—*Aylesbury.*—1, E. Shaw. 2, R. Powell, Gwyddelwern, Corwen. *Rouen.*—1, W. Stephens. 2, J. White, Whitley, Netherton, Wakefield. hc, G. Moss, Moreton, Birkenhead. c, P. A. Beck.

EXTRA STOCK.—c, Rev. P. G. Bentley (White Call Ducks); Lord Kenyon, Brognytn (Silkies).

SELLING CLASS.—1, W. B. Etches (Black Red Game Bantams). 2, E. Smith (Black-breasted Red Game). c, Mrs. Somerville (Silver-Grey Dorkings).

LOCAL CLASSES—CHICKENS OF 1872.

GAME.—*Black-breasted.*—*Chickens.*—1, E. Smith. 2, Rev. P. G. Bentley. *Pullets.*—1, P. A. Beck. 2, C. Wedge, Trefonen, Oswestry. hc, E. Smith. c, E. Shaw.

DOBBINGS.—*Chickens.*—1 and hc, Mrs. Somerville. 2 and c, E. Shaw.

AMATEURS' PRIZES.—1, G. Rogers, Woodhill, Oswestry (Duckwing Game). 2, P. A. Beck.

The Judge was Mr. Edward Hewitt, of Sparkbrook, near Birmingham.

WHITBY CANARY SHOW.

This was held on September 24th. A report is given in another column.

NORWICH.—*Clear Yellow.*—1, H. Johnson, Derby. 2 and Extra 3, Adams and Athersuch, Coventry. 3, G. & J. Mackley, Norwich. vhc, Adams & Athersuch; G. & J. Mackley. hc, Moore & Wynn, Northampton. c, Prosser & Stokes, Derby.

NORWICH.—*Clear Buff.*—1, M. King, Scarborough. 2, C. Worth, Skelton, Marske-by-the-Sea. 3, T. Irons, Northampton. Extra 3, Prosser & Stokes. vhc, Adams & Athersuch (3). hc, G. & J. Mackley (2). c, Holmes & Doyle, Nottingham; J. Audley, Leicester.

NORWICH.—*Clear Yellow, Evenly-marked.*—1 and vhc, Adams & Athersuch. 2, Moore & Wynn. 3, E. Mills, Sunderland. hc, T. Armstrong, Northallerton. c, H. Young, Knarborough.

NORWICH.—*Clear Buff, Evenly-marked.*—1, 2, and hc, Adams & Athersuch. 3, S. Bunting, Derby. Extra 3, J. Goode, Leicester. vhc, Holmes & Doyle; Moore & Wynn. c, Prosser & Stokes.

NORWICH.—*Clear Yellow, Unevenly Marked or Ticked.*—1, vhc, and hc, Adams and Athersuch. 2, Prosser & Stokes. 3, G. & J. Mackley. c, M. King.

NORWICH.—*Clear Buff, Unevenly-marked or Ticked.*—1 and 2, G. & J. Mackley. 3, J. G. Edge, Derby. vhc, Adams & Athersuch. hc, Adams & Athersuch; Holmes & Doyle. c, H. Johnson, More & Wynn.

NORWICH.—*Clear Yellow or Buff, Green, Grey, Buff, or Yellow Crest.*—1, J. Goode. 2, J. Martin, Northampton. 3, J. Parker, Sunderland. Extra 3, S. Tones, Northampton; T. Irons. vhc, Green & Rymell, Coventry; J. Bexon, Derby. hc, G. & J. Mackley. c, W. Watson, jun., Darlington.

BELGIAN.—*Clear Yellow.*—1, J. Ross, Sheffield. 2, J. Stevens, Middlesborough. *Clear Buff.*—1 and 2, W. Bulmer, Stockton. 3, J. & T. Fawcett, Leeds.

YORKSHIRE.—*Clear Yellow.*—1, W. Johnson, Northallerton. 2, J. & T. Fawcett. 3, W. Thornton, Darlington. vhc, C. Holdsworth, Bradford. hc, L. Belk, Dewsbury. c, C. Worth.

YORKSHIRE.—*Clear Buff.*—1, J. & T. Fawcett. 2, L. Belk. 3, J. Rowland, Marske-by-the-Sea. vhc, C. Holdsworth. hc, W. Hanson, Gisborough.

NNAMON.—*Clear Yellow.*—1, Freen & Rymell. 2, J. Bexon. 3, Moore and Wynn. vhc, Moore & Wynn; C. Buller, Northampton. hc, S. Tones. c, J. Parker.

CNNAMON.—*Clear Buff.*—1, J. Bexon. 2, E. Mills. 3, R. Simpson, Whitby. vhc, S. Tones. hc, C. Hillier. c, G. & J. Mackley.

LIZARD.—*Golden-spangled.*—1, J. Taylor, Middlesborough. 2, R. Ritchie, Darlington. 3, Mann & Jackson, Burton-on-Trent. vhc, W. Watson, jun. hc, Freen and Rymell. c, G. Gay, Derby.

LIZARD.—*Silver-spangled.*—1, Greenwood & Swann, Scarborough. 2, G. & J. Mackley. 3, J. Taylor. Extra 3, Mann & Jackson. vhc, Freen & Rymell; R. Ritchie. hc, Freen & Rymell. 2, Bunting. c, R. Ritchie.

CANARY.—*Green.*—1 and 2, C. Worth. 3, T. Tenniswood, Middlesborough. *Any other Variety.*—1, J. & T. Fawcett. 2, J. Stevens. 3, L. Belk. vhc, L. Belk; W. Porritt. hc, R. Hawman, Middlesborough; Moore & Wynn. c, T. Armstrong, Northallerton.

SIX CANARIES IN ONE CAGE.—1, G. & J. Mackley. 2, R. Simpson. 3, Henderson & Readman. hc, Mann & Jackson. c, J. D. Edge. E. Mills.

MULE.—*Yellow Goldfinch and Canary.*—1, R. Hawman. 2, E. Mills. vhc, J. Goode.

MULE.—*Buff Goldfinch and Canary.*—1, R. Hawman. 2, G. & J. Mackley. vhc, J. Taylor; R. Hawman; J. Drake, Ipswich. hc, J. Goode; Holmes & Doyle; J. Drake. c, R. D. Waite, Norton, Malton.

MULE.—*Any other Variety.*—1 and hc, J. Stephens. 2, S. Bunting. **PARROT.**—1, Mrs. Weighill, Whitby. 2, C. Harrison, Whitby.

PARAKEET.—1, Mrs. Coates, Whitby.

LOCAL PRIZES.

NORWICH.—*Yellow or Buff.*—1, R. Simpson. Extra 1, R. Robinson, Whitby. 2, Henderson & Readman.

MARKED.—*Yellow or Buff.*—1, R. Simpson. 2, G. Robson, Whitby. vhc, Henderson & Readman. hc, R. Peiron, Whitby.

ANY OTHER VARIETY.—1, T. Boyes. 2, H. Dale.

MULE.—1, J. Gray. 2, M. Thompson.

BULLFINCH.—1, J. Howe. 2, Mrs. Howe.

GOLDFINCH.—1, T. H. Woodward. 2, H. Dale.

LINNET.—1, J. Leek, Newholm. 2, T. Harland, Grosmont.

JUDGES.—Mr. W. A. Blakston, Sunderland; and Mr. J. Baxter, Newcastle.

DEVIZES POULTRY SHOW.—This will be on the 28th and 29th of January. There will be pieces of plate for the best pen of Dorkings in two classes; Cochins in two; and one for the best of White Cochins, given by Mr. Woodgate; for the best pen of Dark Brahmas; the best pen of Light, given by the assistance of Mr. Maynard; for the best pen of Spanish; for the best pen of Game in four classes (cocks and hens in these classes to be shown separately); one for the best of Hamburgs in two classes; and one for the best pen of Black Hamburgs, given by subscription. For Pigeons is offered a piece of plate, value £5 5s., to the exhibitor making the greatest number of points.

Each of the plate prizes for poultry will be of the full value of £3 8s. After this announcement we hope other committees will not fix on the same days for their shows.

SCARBOROUGH BIRD SHOW.

THIS took place on the 26th and 27th ult. Mr. Blakston's remarks will be found in another column,

NORWICH.—*Clear Yellow*.—1 and *hc*, Adams & Athersuch, Spoonend, Coventry. 2 and *vhc*, G. & J. Mackley, Norwich. 3, Moore & Wynne, Northampton. *Clear Buff*.—1, M. King, Scarborough. 2, Adams & Athersuch. 3, G. & J. Mackley, *hc*, W. Barwell.

NORWICH.—*Even-marked Yellow*.—1 and *vhc*, Adams & Athersuch. 2, Moore & Wynne. 3, E. Mills, Sunderland. *hc*, T. Carbut, Fossigate, York. *Even-marked Buff*.—1, 2, and *hc*, Adams & Athersuch. 3, S. Buntin, Derby. *vhc*, Moore & Wynne.

NORWICH.—*Ticked, or Uneven-marked Yellow*.—1, 2, and *vhc*, Adams & Athersuch. 3, G. & J. Mackley. *hc*, M. King. *Ticked, or Uneven-marked Buff*.—1 and 2, G. & J. Mackley. 3, A. Upton, Derby. *vhc* and *hc*, Adams & Athersuch.

NORWICH.—*Any variety of Crested*.—1 and 2, Wallace & Beloe, Berwick-on-Tweed. 2, J. Martin, Northampton. *vhc*, J. Parker, Sunderland. *hc*, T. Irons, Northampton.

BEELIAN.—1, J. N. Harrison, Belper. 2, S. Buntin. 3, W. Forth, Pocklington. *vhc*, J. Stevens, Middlesbrough. *hc*, J. T. Fawcitt, Baildon, Leeds.

YORKSHIRE.—*Clear Yellow or Buff*.—1 and 2, J. T. Fawcitt. 3, L. Belk, Dewsbury. *vhc*, E. Bradley, Westgate, Guisborough. *hc*, J. Cooper, Middlesbrough. *Even-marked Yellow or Buff*.—1 and 2, L. Belk. 2, J. Waterson. *vhc*, J. Stevens.

LIZARD.—*Golden-spangled*.—1, J. Taylor, Middlesbrough. 2, C. Greenwood, Scarborough. 3, R. Ritchie, Darlington. *vhc*, J. Ellis, Scarborough. *hc*, J. N. Harrison. *Stitch*.—1 and 2, C. Greenwood. 3, G. & J. Mackley. *vhc*, J. Taylor. *hc*, R. Ritchie (3).

CINNAMON.—*Yellow or Buff*.—1, Wallace & Beloe. 2, J. Bexson, Derby. 3 and *hc*, Moore & Wynne.

ANY OTHER VARIETY.—1, J. T. Fawcitt. 2, J. Stevens. 3 and *vhc*, L. Belk, *hc*, W. Hatton, Baildon, Leeds.

GOLDFINCH MULE.—*Even-marked*.—1 and *hc*, G. & J. Mackley. 2, R. Hawman, Middlesbrough. 3, J. Cooper. *Dar*.—1, R. Hawman. 2, W. Lister, Norton, Malton. 3, M. Burton, York. *hc*, G. & J. Mackley.

CAGE OF SIX CANARIES.—*Any Variety*.—1, G. & J. Mackley. 2, Clark and Jarvis, Scarborough. 3, J. Stevens. *vhc*, J. Downs, Highgate, Beverley. *hc*, M. King.

BRITISH BIRDS.—*Any variety*.—1, Mrs. Waterson, Eastborough, Scarborough (Talking Starling). 2, C. Burton (Goldfinch). 3, W. Harland, York (Bullfinch). *vhc*, W. Lister (Bullfinch).

FOREIGN BIRDS.—*Any variety*.—1, J. Calvert, Bootham, York (Rosella Parakeet). 2, Mrs. Waterson (Golden Bishop). *vhc*, H. Wyrill, Scarborough (Mountain Miner, from Chittagong); Wallace & Beloe. *hc*, J. Waterson, Eastborough, Scarborough.

PARROT.—*Grey*.—1, Mrs. Waterson. 2, J. Waterson. *vhc*, J. Steward, Scarborough. *Green, or any other Large*.—1, J. G. Hart, Falsgrave, Scarborough. 2, J. Calvert. *vhc*, W. Musson, Scarborough.

LOVE BIRDS.—*Australian*.—1, J. B. Baker, Scarborough. 2, M. Lister.

COCKATOO.—1, J. Wyrill. 2, J. B. Baker. *vhc*, J. Calvert.

JUDGES.—Mr. W. A. Blakston, Sunderland, and Mr. J. Baxter, Newcastle.

SCOTCH HOUSE TUMBLERS.

AFTER the young House Tumbler has begun to tumble freely inside the loft, if the entrance to it is on the top of a house or much above the level of the ground it will always be found much safer to confine it there altogether. This course is, however, often followed by the tumbling disappearing for some little time, and when this happens one feels very much inclined to let it out again; if this is done the probabilities are that for a day or two the bird will fly pretty well, but before long it will again be found in the same difficulties as when it first began to develop into a House Tumbler, and the chances of losing it will now be much increased, as the fits of tumbling will generally be more severe than at first. The better plan, however, is to exercise a little patience, as the tumbling will probably return in a very short time, and almost always as soon as the bird begins to sit on eggs—this fact no doubt shows that penning it up would probably be followed by the same effect; but as the breed is so prolific that the birds will not only continue to lay eggs, but also hatch and rear young nearly the whole year round, I have found it quite unnecessary to resort to the practice of penning them up. If I had suitable accommodation for keeping them where the entrance to the Pigeon house could be made on the ground or very near to it I should prefer to adopt that plan, having a wire-netting enclosure in front, with a door opening on to a grass plot. When kept in this way there is little danger (unless from cats) in letting out the whole of the birds, for if any of the House Tumblers do happen to get up on the top of any building, they have comparatively little difficulty in flying down; many birds can do that, but would find it quite impossible to fly up.

The wired aviary in front, with an entrance on the ground level, or if higher with boards so arranged that the birds can walk from the Pigeon house to the aviary without using their wings, and from the aviary to the Pigeon house in the same way, enables any House Tumblers which cannot fly to enjoy the benefit of basking in the sun, and when it is wished to exhibit the performances of these birds the door has merely to be opened and the birds driven on to the grass plot, the soft turf protecting any which tumble in any degree heavily from hurting themselves, and besides this many birds which would not tumble at all inside a loft will tumble very prettily outside on the ground. About the neatest performer which I ever saw was a Red-and-white cock of this description I had some years ago, which used to afford me great amusement. At that

time I had a Pigeon house with an entrance about 8 feet from the ground, and when this bird was building I occasionally opened the door of the wired enclosure for the purpose of watching his performances. No sooner would the door be opened than out he would come and pick up the first straw or twig he could find, walk quickly up beneath the entrance to the Pigeon house with it, then attempt to fly up, but in this he very rarely succeeded until he had tumbled at least half a dozen times, barely clearing his head each time, but landing beautifully on tiptoe to make another attempt without a moment's delay. The curiosity about him, however, was the tenacious way he held on by the straw; he often dropped it—sometimes the first time, sometimes the second, and so on, but I have many a time counted him tumble seven times, and retain his hold of it all the time, carrying it at last inside to his mate.

It should always be borne in mind that birds which tumble a great deal should never be turned out in stormy weather, as there is great danger of their losing entire control of themselves, and I have known birds in such circumstances dashed against a wall and killed on the spot, and others I have known carried to a distance perfectly incredible when the meagre powers of flight which the birds possessed were considered. These cases only happened when either gross carelessness or ignorance was at the bottom of them, but the fancier should guard against accidents of the kind by looking well to the state of the wind before giving them their morning fly. The House Tumbler, when it has begun to tumble inside, does not become incapable of flight all at once, but continues for a time able to fly about through the loft, tumbling only occasionally at first, but gradually improving with age until many of them become unable to nest anywhere but on the floor, and seldom attempt to fly. In this state they have been described as diseased, broken-spirited, maimed, &c. Never was there a greater mistake, as healthier livelier birds it is impossible to find of any breed if treated in a rational way; neither are they particularly liable to accidents if confined to the loft at the proper time, as although I have kept birds of the very highest type for many years, I have never had a single accident to any of them inside, and I have them now of an unknown age, sound in wind and limb, glossy in plumage, and as merry as the merriest. It is not, however, rational treatment to put them into the hands of boys who will keep them continually knocking about for the purpose of seeing them tumbling, and in such cases I do not think it can be expected that they will either keep in health or escape accident, but it is wonderful how much even of that they will stand. There is one result which is always sure to follow this treatment—viz., that the birds get shy, and instead of attempting to rise when wanted they will rush into a corner and refuse to come out. To overcome this difficulty the youthful fancier resorts to the practice of lifting them by hand, so that he may be able to see them tumble while they fly or attempt to fly to the floor, and if a bird will hurt itself at all then is the time it will do it, as in its fright and eagerness to get away it forgets its usual care, and goes down with a smash. One rule which I think ought always to be observed is never to touch a House Tumbler at all when it is wanted to tumble. I never do so myself, and generally find a snap with my fingers sufficient to make them go over, and when this fails a wave with a hat or a handkerchief always suffices; care should be taken even with this plan not to go too near to them, as when the wing is suddenly expanded it sometimes touches the hand or hat unexpectedly, and a very slight touch will put a first-rate bird off its balance, and prevent it from landing nicely on its feet.

There are two very distinct styles of inside tumbling. The first and probably the most common is where the birds tumble much in the same style as an Air Tumbler—that is, their flight is but little interrupted by the tumbling. Some birds of this kind when they rise will tumble so near to the floor that one wonders how their head escapes, and yet continue their course, probably tumbling two or three times more before settling down. This I would consider the best style, and they would be the best birds but for the fact that, so far as my personal experience goes, they can never absolutely be depended upon: you never know when they will tumble and when they will not until you try them. I consider certainty of performance the highest quality, and therefore look upon them as inferior birds to the other class which do not tumble in quite such good style, but which are by far the most certain performers; these are usually what we call a little heavy—that is, coming down a little after the tumble, which generally brings them to the floor. They should not, however, come down with a crash, but if the tumble be made any distance from the floor, say a couple of feet or more, they should be seen distinctly to balance themselves on the wing before alighting on their feet, and even if the tumble be made so close to the floor that it is impossible to see them balance themselves on the wing as their feet touch the ground, before they could do it the practised ear will observe the sharp crack.

Before closing the retrospective portion of my subject I shall briefly advert to one or two matters which I have omitted to notice. "WILTSHIRE RECTOR" has hazarded an opinion that close breeding destroys the tumbling property, while "Old

BOB RIMLEY" has given us exactly the opposite—viz., that house or ground tumbling is due to it. My experience is that excellent results come from it, and equally good without it, and I do not think it makes much difference provided the matching is for tumbling properties, and the relationship not so close as to deprive the offspring of a vigorous constitution. I would not, however, expect much good to result from close breeding if the matching be made merely with the view of producing some other point than tumbling, such as a clean-cut head in a Bald, or for smallness of size, &c. I would, on the other hand, be inclined to think that plenty of fresh blood would increase the flying propensities of Tumblers, but I cannot give the benefit of actual experiment in the matter, and can only argue from analogy. I know that if a Tumbler be crossed with another breed, such as an Owl or a Nun, the offspring are often extraordinary birds to fly, not perhaps for very long at a time, but are continually at it of their own accord; they do not, however, soar or tumble, and soon spoil a flight of Tumblers. I think this gives us an indication of the manner in which it should be sought to increase the flying property, not that I would under any circumstances cross with a non-tumbling bird, but keep up a frequent admixture of fresh blood of first-rate quality. My idea may be a wrong one, and perhaps some of your readers who know something of the matter will give us the benefit of their experience.

I have crossed the performing bird with the Short-faced Tumbler more than once, and have found some of the first cross tumble moderately in the air; they have not, however, been pretty birds, being larger than either parent, and with what I consider a very coarse head. Probably by crossing these birds again with performing birds a better result might have been obtained, but I never could feel inclined to keep them long enough to try the effect. The continuation of these papers will now be more of a prospective character than the past ones have been, and the next will be devoted to the House Tumbler as a bird suited for exhibition.—SCOTCH THISTLE.

FOSTER-PARENT PIGEONS.

For several years my experience in the breeding of the higher-class Pigeons, such as Pouters, Carriers, and Barbs, had been very discouraging. I found them generally bad feeders. Some would not feed at all; others would get on pretty well till they were going from the soft to the hard food, when they left off feeding altogether and took to nesting again. Thus I was continually losing my young birds at the stage when they were becoming most interesting.

Last year I purchased several pairs of show Antwerps, which I kept as feeders, and found them far superior to anything I had ever tried. The very evening they were introduced to my loft, one of them, a sage-looking old hen, took to feeding a starving young Pouter which had just been deserted by its unnatural parents, and brought it up to a strong healthy bird. It matters not what stage they may have reached with their incubation, they will at once adopt young birds placed under them, and prove first-rate foster-parents. I have given them young birds ten days old when they had been only two days down on their own eggs, and they took to them at once and brought them up. Should the period of hatching have extended over twelve or fourteen days the soft meet will come upon them; but they soon get quit of it, and the young birds do not seem to be any the worse for it—in fact, in some cases it was found most advantageous, making a strong bird of one that was weakly.

To those of your readers whose experience in breeding was similar to mine, I would say that a few pairs of these interesting birds are indispensable. Those I have are Silver Duns, and are the admiration of my uninitiated friends, who invariably pronounce them the handsomest birds I have, and looking at them from their standpoint they are right. They are active, strong, and vigorous, and from the formation of their beak are admirably adapted for feeding anything, from the long-faced Carrier down to the short-faced Barb.—ANTWERP.

NOTES ON WHITBY AND SCARBOROUGH CANARY SHOWS.

NEVER, probably, did the exhibition year open under such a promising aspect as it has done this year; and the twin watering places of the north have inaugurated the season with shows which, in point of excellence, have seldom been surpassed, while, in respect of numbers, they have never been equalled by any exhibition held at this early period of the year. The number of entries has been unprecedentedly large, Whitby securing 397, and the "Queen of the North" 354—numbers hitherto not often reached even at a later period of the year when exhibition stock is in its beauty. Such support speaks volumes in favour of the confidence reposed in the executive of these Shows, while a glance at the names in the prize list will give some idea of the quality of the stuff sent into and bred in Yorkshire.

Each Exhibition was rendered more attractive from being held in connection with a flower show, that at Whitby being under the direction of the Floral and Horticultural Society, an old institution of that town, while that at Scarborough was under the auspices of a band of earnest workers who, under the leadership of the Honorary Secretary Mr. J. B. Baker, are endeavouring to attract the attention of the working man by sympathising with him in his amusements, and encouraging him to seek recreation in innocent and healthful pursuits as opposed to the seductive and demoralising attractions of the tavern. The Scarborough "Window Gardening and Song Bird Society!"—I was charmed with the title immediately I saw it, and I will just give "WILKINSHIRE RECTOR" four texts taken from its modest broad sheet, in the full hope that its promoters may, at no distant day, be encouraged by one of his hearty cheery sermons.

"To any man or woman occupying a house not exceeding £12 a-year rent, and having no plot of ground capable of growing plants, and to the children of the same."

"To the children of the National, Lancastrian, Amicable, Infant, Ragged and other public schools not having a plot of ground capable of growing plants."

"To the inmates of Hospitals, Almshouses, Free Dwellings, and the Workhouse, and to the children of such not having a plot of ground capable of growing plants."

"For the best bouquet of wild flowers gathered by a boy or girl."

To each of these classes, prizes for various window-grown plants were offered. I could myself almost moralise on the kindly spirit which pervades the above. To my mind there is something indescribably beautiful in it; and to the generous hearts who could think of the inmates of hospitals, almshouses, free dwellings, the workhouse, and the children of the same, I would only say, "Inasmuch as ye did it unto the least of these, ye did it unto Me."

Presuming that both prize lists will appear in this week's issue I will review them side by side, which will make my labour somewhat lighter, inasmuch as in many instances the same birds were successful in the same classes at both places. At Whitby, Mr. H. Johnson, of Derby, eclipsed all comers in the Clear Jonque Norwich class with a wonderful little bird, a complete blaze of colour; and if Derby can afford to send out such at the nominal figure of 25s. less entry fee, cage, travelling expenses, and commission, what may we not expect by-and-by when the greater stars appear above the horizon? It is needless to say it was quickly claimed. Messrs. Adams & Athersuch's second-prize Jonque was a fine bird, very, as was also Messrs. G. & J. Mackley's third, and Adams's extra third, and both were very confident of having better at home and being able to beat No. 16 at a future day; but if No. 16 trains on and not off, it will require something out of the common to lower his colours. The same birds won at Scarborough, but as Mr. Johnson's bird was not there they moved up a step, Mr. Adams taking first place.

In Clear Buffs Mr. Marfleet King, of Scarborough, was first at both places with a grand bird of his own breeding; not quite mealy enough to suit my taste, but a grand bird, all colour. He was by no means as clean as he ought to have been, and if he is destined to maintain his proud position he must go through the laundry. There was not much to choose between it and No. 44, second prize, shown by Mr. Caleb Worth, of Skelton, which was caged in splendid condition. Exhibitors should bear in mind that it is next to useless to show a dirty bird, especially a Buff, for the colour is all outside, and so is the dirt, and very little of the latter will hide all the former. Should this meet the eye of Marfleet King let him "overhaul it carefully, and, when found, make a note of." Mr. Irons, of Northampton, was third with a high-coloured bird, which soon found a buyer at 30s., from which I infer Mr. Irons, too, must have better at home. Messrs. Prosser & Stokes, of Derby, were extra third with a specimen worthy of the great midland Canary town.

Adams & Athersuch seem to make their Evenly-Marked Yellows and Buffs to order—I speak it respectfully, of course. They are almost invincible. Their Jonque was good, but I have seen better pencilled eyes. The bird, however, was not quite "fine." Moore & Wynn's second has a pair of good wings, is slightly but distinctly marked on each eye, but is short of colour—a good bird nevertheless. Mr. Mill's third has size, fair colour, even wings, but one eye more heavily marked than the other. These three occupied the same relative position at both Shows.

Evenly-Marked Buffs were a splendid class, and many a bird could have won if there had not been a better before him—a great truth, though a seeming absurdity. But it very frequently happens that when a "General Peel" appears, a "Blair Athol" steps in and disappoints him. No doubt many a good bird goes home to disappoint and surprise his owner when he sees only a commendation where he anticipated nothing less than a first or second prize. The prizetakers fairly distanced all competitors, and notably so the first, which stood alone.

Ticked birds were splendid, Adams & Athersuch and G. & J. Mackley dividing the chief honours between them, though in

each class Derby, in the persons of Messrs. Prosser & Stokes and Mr. Edge, would not be denied, each taking a prize with a fine show of colour and quality. Neither of the latter were represented at Scarborough, but Mr. Ufton did battle for Derby there and scored third in the Ticked Mealies with a noble bird. It will take something good to beat G. & J. Mackley's first in that class.

Crests were very fine indeed, and several classes being grouped into one, the judging was by no means easy. Mr. Goode, of Leicester, facilitated matters a little by sending a splendid Buff about which there could be no two opinions. Rich in colour and quality of feather with good marking and excellent crest, there was no difficulty in selecting him for first; but it was not till after a close examination and weighing of merits that we decided on giving Mr. J. Martin, of Northampton, second for his Evenly-Marked and Crested Buff; Mr. Parker, of Sunderland, third for a similar bird, coarser and shorter of colour; and Mr. S. Tomes (everyone knows where S. Tomes hails from) extra third for a somewhat coarse bird, clean body, and large, flat, but rather thinnish crest.

But the best crest was to come at Scarborough, and Messrs. Wallace & Beloe's first-prize bird, Clean Buff with delicious crest, is the best head I have seen this year. The third here also fell to another bird exhibited by the Berwick-on-Tweed firm, a Yellow, marked on one wing only, but having a very superior crest for a Yellow bird. Colour was also good, and we had no hesitation in awarding it a prize, Mr. Parker dropping back into the commended division.—W. A. BLAXTON.

(To be continued.)

CANARY AILMENTS.—No. 2.

DIARRHŒA.—This is the next disease to dread. Its causes are, neglected indigestion, impure water or air, green food, food of an acid nature, such as rape seed, sudden changes in temperature, cold, &c. The principal remedies are, aconite, pulsatilla, nux vomica, bryonia, arsenicum, mercurius, china, phosphorus, veratrum, and chamomilla. If severe, with great inflammation of the bowels, and caused by impure water, stale egg, green food, or acids, give aconite and arsenicum, or mercurius. If from neglected indigestion, give aconite and pulsatilla, or nux vomica, in alternation with china. If from sudden change in temperature, give aconite and bryonia. When the evacuations are very watery and there is apparently cramp, give veratrum. If only simple diarrhœa, give chamomilla or china. For diarrhœa in old birds give china and phosphorus.

CONSTIPATION.—This need never become dangerous. The remedies are, a little green food and nux vomica or bryonia. If the costiveness is habitual give sulphur.

PRP.—This is I consider a feverish cold which closes the pores of the body more or less, and interferes with the secretions necessary for digestion. It may be easily detected, for the plumage of the birds thus afflicted has a very dry dusty look, and you frequently notice them ruffling their feathers, and endeavouring to clear their nostrils. As these symptoms, however, may be caused by slight disorganisation of the bowels, it is as well to examine a bird before treating it, and if the abdomen appears at all distended, with a tendency to inflame, depend upon it the cause is there, and will require same treatment as the early stages of indigestion; but if it looks all right it is from cold, and the remedies required will be aconite and arsenicum, in alternation with aconite and mercurius.

EGG-RUPTURE.—Nearly all my fatal cases have been from this cause, but since adopting the following treatment I have only had one slight case. I give one drop of nux vomica in the water for a few days prior to laying, a moderate supply of green food, and mix a little coarse brown sugar with the egg and biscuit. When I am at all apprehensive of danger I lubricate the vent of the bird with oil when she is near laying, and should my fears become confirmed I at once remove the bird to a much higher temperature. This treatment will, I believe, reduce the fatal cases to a minimum.

ASTHMA, BRONCHITIS, &c.—Now comes the worst of all, for I am really almost inclined to believe that if a bird once contracts asthma it will never be entirely freed from it. Perhaps the advanced stage would be more properly termed consumption. The remedies I use for various chest complaints and asthma are, aconite, ipecacuanha, arsenicum, bryonia, spongia, nux vomica, and sulphur. For spasmodic asthma—that is, when the bird at times suddenly struggles hard for breath, I give aconite. When there is often a rattling noise in the windpipe and panting, I give aconite and ipecacuanha, or bryonia. For wheezing breathing whilst asleep, I give arsenicum and spongia; ipecacuanha is also useful. If the disease is of long standing give sulphur in alternation with one or more of the other remedies. In all cases it is advisable to give occasionally nux vomica, as it is homœopathic to the condition of the digestive organs which is conducive to asthma. I usually give china if there is any looseness of the bowels. There are many other remedies which are worth trying, should any of the foregoing not give satisfaction, such as

phosphorus, drosera, dulcamara, antimonium tartaricum, &c. Breeders cannot give too much attention to their birds when the lungs, bronchial tubes, &c., seem to be at all affected, and one or more remedies should be at once administered, according to the symptoms; for I am fully persuaded that unless the patient be an old bird, confirmed asthma can only be induced by neglecting to attack the disease in its first stages.

My list now, though far from complete, will be found, I believe, to include at least those diseases which fanciers have most to dread, and to which most of their fatal cases are due. There are several which I might have added, but I thought it best to confine myself entirely to what I have actually encountered during my brief life as a fancier. I shall, of course, be glad at any time to give you further information, should it be my lot to have further disasters, but from my past experience with homœopathic treatment I do not anticipate ever being in a position to afford you much more.

In conclusion, should you think of making use of this communication, I trust it will be the means of turning the attention of fanciers generally to homœopathy, and as there are doubtless many thinking individuals amongst them, they will in time be able to thoroughly uproot the old horse-doctoring system, and thus render the awful fatality which so many have experienced of late years a thing of the past.

As to the several diseases which I have not enumerated, I would recommend any fancier who may have the misfortune to have the same in his aviary, to purchase at once a small case of medicines and a homœopathic guide-book, from which he will soon learn how to treat them if he will only exercise a little judgment with regard to the various symptoms, the use of the medicines as stated in his materia medica, and bear in mind the difference between the anatomy and physiology of a human being and a bird.

ALTERING HIVES.

I HAVE some cottage hives which I want to convert into something similar to Payne's cottage hives. The best way, I should think, is to cut a hole 4 inches in diameter in the top, and then fasten an adapting-board half an inch in thickness, on the top of the hive for supers, feeding-bottles, &c.—E. H.

[Your plan will do well if neatly carried out, but take care to secure firmly your adapting-board, and see that there are no crevices underneath it for ants or other vermin to creep into the hive. A little plaster of Paris or Roman cement will answer for a stopping.]

BEEES AND HONEY AT FLOWER SHOWS—QUEENS' MATES.

SOME of your correspondents express surprise at bees and honey not having been adopted as exhibits at flower shows till this year. This is inaccurate, for the Spalding Flower, Fruit, and Poultry Society has ever since its establishment, seven years ago, offered premiums for both honey and bee apparatus, and we have always had numerous kinds of hives exhibited with bees, some Ligurian, some black bees at work. On one occasion the rare Egyptian bees (*Apis dorsata*) were shown. These, with a large collection of honey, have always proved a very great attraction.

From a somewhat lengthened observation I can inform your correspondent, "J. S.," that queen bees almost invariably mate with the drones of other hives, and not their own, when left to natural swarming and production.—G. F. B., *Spalding*.

A BEE FLOWER.—I have a little balcony facing the south, and in it a plant of *Sedum spectabile*, also known as *S. Fabria*, and its rosy heads of flowers are every sunny day the favourite resort of worker bees. The plant is less than a foot in diameter, but never when the sun shines are there less than a dozen bees on it.—C.

OUR LETTER BOX.

BOOKS (J. H. E.).—Enclose seven postage stamps with your address, and we will send you free by post our "Poultry Book." If you want further information write again.

AYLESBURY POULTRY SHOW.—The first prize and silver cup for Aylesbury Ducks were won by Mr. J. K. Fowler, and not by Mr. T. Kingsley. Mr. Fowler also won the second prize for Rouen Ducks.

ALTRINCHAM (J. E.).—We regret, as you do, that the Show was not advertised.

ECLESFIELD SHOW (J. D.).—Every Judge is liable to make a mistake, and the exhibitor can have no remedy. It would be useless to publish your letter, but we agree in the opinion that a Judge ought to be very certain before he decides that two Pigeons are of the same sex.

LICE ON FOWLS (Minorca).—You seem to have tried all the remedies except the mixture of sulphur with the dust bath. Try it. Carbolic acid soap used in washing walls, boards, and roosting-places destroys all vermin. Parasites are bred by insufficient and improper feeding. Nothing produces them so certainly as rice. Their presence always indicates want of condition.

Drop some powdered camphor in the feathers of those most tormented. Discontinue all dry food, and feed on slaked meal only.

ROUEN DUCKS (Anas).—Your Rouen drake four months old weighs very well, being 7 lbs. 11 ozs. If the class for Rouen Ducks be an open one, you can show birds of any age in the same pen; but if two classes, one for adult, one for birds of the year, you must show either all birds of previous years or all birds of this. The competition must be very close indeed if the slight mark you name be of any consequence.

CRÈVE-CŒURS' FACE SWOLLEN (Crève-Cœur).—The breed are subject to the disease you name, but they do not die of it. Continue small doses of camphor, feed entirely on soft food, and allow no water, save a small drink in the morning, the same at mid-day and at evening; very little each time, and on no account to have water by her. When suffering from disease this breed drinks incessantly, and increases the malady thereby. It is always wise to wash such a face with vinegar and cold water morning and evening.

STOCK OF FOWLS (Subscriber).—One hundred hens on half an acre of ground are too many. The disease you mention is incipient roup. It never goes beyond that stage in Asiatic breeds. It is not as fatal in any breed as it used to be. No doubt many of your hens are old ones, and they will not lay many eggs, but 2½d. per week per hen is not enough when in full season. If your mottled hens have begun laying again you are fortunate, as eggs will sell now well till after Christmas. You must, however, earn and deserve a reputation for selling them well laid. Fifty pullets are as many as you can keep profitably on half an acre, and that number only by allowing them to do as they like. You should now be looking out pullets, and weeding and selling hens.

PILE GAME BANTAMS (A. S. B.).—There is no proper colour for the legs of Pile Game, but they are mostly white. The hens should be drab and white, the cocks red and white. We repeat there is no proper colour, but all must be alike in the pen. The points are the same as in Game fowls or Game Bantams.

EGG-EATING PULLET (C. S.).—You can only cure the pullet by watching and driving her off the nest as soon as she has laid. You can cross any breeds you like, but some are better than others. We believe the best cross to be between Brahma cock and Dorking pullets.

DARK BRAHMAS (H. F. H.).—We do not advise you to get rid of your Dark Brahmas, but they will not do to exhibit. Keep them, and put them next year to a lighter cock. Their weights are very good. The Dark Dorkings are generally the heaviest, and many people think them the handsomest. The crooked breast is a fatal fault, and the show was badly judged where the prize cock had a crooked breast.

JACOBS AT SHOWS (G. W. H.).—Except at Birmingham, where we have seen Jacobs divided into two classes, first Yellow, second Any other colour, all the colours compete together, and the prizes are, consequently, won by the best birds of whatever colour they may happen to be. If, therefore, your Red-splashed (an old-fashioned colour, and of which there were in former days splendid specimens) were better in points than their adversaries, they would win against any colour, at least they ought to do so. A handsomely-splashed or mottled bird has to your minds less of the Baldhead-Tumbler appearance than the Whole-colours. The White must have pearl eyes, or their case as exhibition birds would be hopeless. It is the tendency of all white-plumaged Pigeons to have the bull-eye, and it is the triumph of the fancier to get rid of it. The colours of Jacobs according to precedence are thus arranged by some fanciers:—Black, Red, Yellow, White or any other colour. Blue, however, if forthcoming, should from its rarity stand high. Whoever carefully cultivates this variety of Pigeon will deserve the thanks of the whole fancy, as the Jacobin has been greatly neglected, and yet it is a very pretty bird, whether Whole-colour or Baldheaded.

POINTS IN BLACK-MOTTLED TRUMPETERS (F. W. H.).—The points in all Trumpeters are rose, crown, muffs, colour and size. The rose is above or at the root of the beak; it should be large, flat, and circular. The hood or crown should be even, large, and rise well from the back of the head, so as to give full effect to a front view. The muffs should be long, strong, and well proportioned. As to colour, the purest white, jet black, and the best mottled will have the preference in their respective classes, other points being equal to those of their competitors. With regard to size, the present taste is in favour of the largest. The above points are those decided upon by the Birmingham Columbarian Society. In regard to the way in which the mottled birds should be bred, the best plan is to put a young black hen, bred from a pair of blacks to a dark-mottled cock. They will produce dark-mottled birds, for the object is to get them dark, not light. They should be mottled with white only on the head, neck, and shoulders of the wings. A pair for exhibition should match as nearly as possible.

SORE EYES IN CARRIERS (J. E. K.).—It is always somewhat difficult to prescribe for unseen patients. Most probably your Carrier is suffering from what are called "spouts," formed by the turning-out of the lower lid. These can be removed by being cut from below upwards with a pair of very sharp scissors. A lotion of lunar caustic has also been recommended in these cases, or a very small fragment of five grains of lunar caustic to an ounce of unsalted lard.

PREPARATION OF WAX (A Subscriber).—We extract the following from our "Bee-keeping Manual," which you can have by post if you enclose five postage stamps with your address:—Having drained all the honey from the combs, wash these in clean water; this liquid, by exposure to the sun and air, will make most excellent vinegar; put them in a clean boiler with some soft water; simmer over a clear fire until the combs are melted; pour a quart or so in a canvas bag, wide at the top and tapering downwards, into a jelly bag; hold this over a tub of cold water; the boiling liquor will immediately pass away, leaving the liquefied wax and dross in the bag. Have ready a piece of smooth board, of such a length that one end may rest at the bottom of the tub and the other end at its top; upon this inclined plane lay your reeking bag, but not so as to touch the cold water; then, by compressing the bag with any convenient roller, the wax will ooze through, and run down the board into the cold water, on the surface of which it will set in thin flakes; empty the dross out of the bag and replenish it with the boiling wax, and proceed as before until all has been pressed. When finished, collect the wax from the surface of the cold water, put it into a clean saucepan with very little water, melt it carefully over a slow fire, skim off the dross as it rises, then pour it into moulds or shapes, and place them where they will cool slowly. The wax may be rendered still more pure by a second melting and moulding.

BEE FEEDING (G. A. J.).—We cannot account for your non-success in the use of the bottle-feeder, as you seem to have adopted the right course. The lino sent as a pattern is of the same quality as that we ourselves use. The neck of the bottle should be smaller than the bottle itself, straight-sided, and without much of a rim. We use the bottles either with or without insertion in a block of wood. If with the latter, we simply stretch the lino over the

mouth of the bottle, and, without tying it round the neck, quickly invert it into the aperture in the block, which has already been placed over the perforated zinc. Care must be taken that the mouth of the bottle rests on the zinc. We have used these bottles for feeding hundreds of times, and have never yet had a case of failure in the way of the syrup running out, but have more often had to contend with the evil of the bees not being able to reach any of the food, from the lino being drawn up into the mouth of the bottle by the too great exhaustion of air. This commonly happens if the bottle does not rest fairly on the zinc. It is proper that air-bubbles should rise at short intervals. If you still find that you cannot succeed in preventing the constant drip of the syrup, try the lino doubled, stretched, and tied tight over the mouth of the bottle, having the perforated zinc beneath as usual.—E.S.

METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	A.M.		IN THE DAY.							
	Baromge reduced to Sea Level.	Hygromete- ter.	Direction of Wind.	Temp. of Sun at 1 ft.	Shade Tem- perature.		Radiation Temperature.		Rain.	
					Max.	Min.	In sun.	On grass.		
1872.										
Sept.										
Oct.										
We. 25	29.6 2	deg. 46.5	deg. 43.8	N.W.	deg. 51.3	deg. 36.2	deg. 104.1	deg. 84.8	0.030	
Th. 26	29.909	51.5	47.3	W.	51.5	57.4	44.2	101.8	42.3	0.159
Fri. 27	29.906	57.8	55.3	S.W.	51.9	63.1	41.6	88.2	38.1	0.070
Sat. 28	29.608	55.8	54.9	S.W.	54.6	65.0	54.8	108.2	53.4	—
Sun 29	29.703	55.7	51.8	W.	53.6	65.0	47.4	107.3	42.4	0.160
Mo. 30	29.978	51.5	49.2	S.W.	52.8	64.6	41.2	107.1	39.3	0.030
Tu. 1	29.886	58.4	55.2	S.W.	53.5	61.7	40.2	85.8	46.2	0.170
Means	29.807	53.7	51.1		52.7	61.8	44.9	100.4	42.4	0.550

REMARKS.

25th.—Fair in morning; rain at 2 P.M.; cloudy with showers, not so cold as yesterday, but more windy.

26th.—A very fine day; cloudy about noon, but soon cleared off, but cold.

27th.—Very wet morning; dry in the middle of the day; rain again in the evening; much warmer, but very windy all day and all night.

28th.—Very windy, with occasional sunshine and shower.

29th.—Very fine till soon after 3 P.M., then suddenly dark, two peels of thunder, and one vivid and near flash of lightning, and sharp shower, but all over in a quarter of an hour.

30th.—Hazy early, then bright and fine till 5 P.M., when there was a slight shower. Wind quite still.

Oct. 1st.—Fine early, cloudy at 10 A.M., and rather so all day.

Mean temperature of air and radiation about 3° higher than last week, but that at a foot below the surface of the soil has fallen 2.9°, probably caused by the frequent showers.—G. J. SYMONS.

COVENT GARDEN MARKET.—OCTOBER 2.

A very fair supply of ordinary vegetables is now furnished, which are moderate in price and good in quality. Of best descriptions of fruit there exists a scarcity of out-door produce, but that from under glass is quite sufficient for the demand. Good Regent Potatoes maintain last week's rates.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	3	0 to 0 0	Mulberries.....	1	0 to 0 0
Apricots.....	doz.	0 0 0	Nectarines.....	doz.	0 0 0
Cherries.....	per lb.	0 0 0	Oranges.....	per 10	8 0 15
Chestnuts.....	bushel	0 0 0	Peaches.....	doz.	10 24 0
Currants.....	per lb.	0 0 0	Pears, kitchen.....	doz.	1 0 3 0
Black.....	do.	0 0 0	dessert.....	doz.	2 0 4 0
Figs.....	doz.	1 6 0	Pine Apples.....	lb.	4 0 8 0
Grapes.....	doz.	1 6 0	Plums.....	per 10	5 0 0
Cobs.....	lb.	1 0 1 6	Quinces.....	doz.	1 0 2 0
Gooseberries.....	quart	0 0 0	Raspberries.....	lb.	0 0 0 0
Grapes, household.....	lb.	2 0 5 0	Strawberries.....	lb.	0 0 0 0
Lemons.....	per 100	6 0 10 0	Walnuts.....	bushel	10 0 25 0
Melons.....	each	2 0 5 0	ditto.....	per 100	2 0 8 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	doz.	2 0 to 4 0	Mushrooms.....	pot	1 0 to 3 0
Asparagus.....	per 100	0 0 0	Mustard & Cress.....	punnet	0 2 0 0
Beans, Kidney.....	per sieve	2 0 0 0	Onions.....	bunch	0 2 0 4
Broad.....	bushel	0 0 0 0	pickling.....	quart	0 6 0 0
Beet, Red.....	doz.	1 0 3 0	Parsley per doz. bunches		2 0 3 0
Broccoli.....	bunch	0 9 1 6	Parsnips.....	doz.	0 9 1 0
Cabbage.....	doz.	1 0 1 6	Peas.....	quart	1 0 1 6
Capsicums.....	per 10	3 0 3 0	Potatoes.....	bushel	3 0 5 0
Carrots.....	bunch	0 6 0 0	Kidney.....	doz.	3 0 5 0
Cauliflower.....	doz.	2 0 4 0	Round.....	doz.	2 0 4 0
Celery.....	bundle	1 6 2 0	Radishes.....	doz. bunches	0 6 1 4
Coleworts.....	doz. bunches	2 0 3 0	Rhubarb.....	bundle	0 0 0 0
Cucumbers.....	each	0 3 1 0	Salsify.....	per bundle	0 1 0 0
pickling.....	doz.	0 0 0 0	Savoy.....	doz.	0 0 0 0
Endive.....	doz.	2 0 0 0	Scorzonera.....	per bundle	0 9 1 0
Fennel.....	bunch	0 3 0 0	Sea-kale.....	basket	0 0 0 0
Garlic.....	lb.	0 6 0 0	Shallots.....	lb.	0 3 0 0
Herbs.....	bunch	0 3 0 0	Spinach.....	bushel	2 0 3 0
Horseradish.....	bundle	3 0 4 0	Tomatoes.....	doz.	1 0 2 0
Leeks.....	bunch	0 3 0 0	Turnips.....	bunch	0 3 0 6
Lettuce.....	doz.	0 9 1 0	Vegetable Marrows.....	doz.	0 6 1 0

POULTRY MARKET.—OCTOBER 2.

TRADE has fallen off, and prices are hardly maintained. Geese sold well during Michaelmas, but rather from a short supply than from a real demand.

	s. d.	s. d.		s. d.	s. d.
Large Fowls.....	3	0 to 3 6	Hares.....	0	0 to 0 0
Smaller ditto.....	2	6 3 0	Rabbits.....	1	5 6 0
Chickens.....	1	9 2 0	Wild ditto.....	0	9 0 10
Geese.....	7	0 10 0	Pigeons.....	0	9 0 10
Ducks.....	2	0 2 6	Pheasants.....	0	9 0 0
Grouse.....	2	0 2 6	Partridges.....	1	9 2 0

WEEKLY CALENDAR.

Day of Month.	Day of Week.	OCTOBER 10—16, 1872.	Average Temperature near London.			Rain in 48 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.					
			Day.	Night.	Mean.	Days.	m.	h.	m.	h.	m.	h.	Days.	m.	s.			
10	TH	Oxford Michaelmas Term begins.	61.6	43.3	52.4	24	18	af	15	af	9	af	3	43af10	8	13	5	284
11	F		61.7	42.4	52.1	22	20	6	13	5	46	3	morn.	9	13	21	285	
12	S		59.2	41.4	50.3	23	21	6	10	5	13	4	7	0	10	13	35	286
13	SUN	20 SUNDAY AFTER TRINITY.	60.7	41.8	51.2	22	23	6	8	5	34	4	33	1	11	13	50	287
14	M		59.9	40.5	50.2	20	25	6	6	5	50	4	0	3	12	14	8	288
15	TU		59.0	40.5	49.8	21	26	6	4	5	8	5	24	4	13	14	17	289
16	W	West Carbery Horticultural Show. Royal Jersey Horticultural Show.	59.0	40.1	49.5	18	28	6	2	5	24	5	47	5	○	14	29	290

From observations taken near London during forty-three years, the average day temperature of the week is 60.1°; and its night temperature 41.4°. The greatest heat was 80°, on the 14th, 1861; and the lowest cold 24°, on the 15th, 1860. The greatest fall of rain was 1.04 inch.

NOTES ON ROSES.



HAVING just run through what has appeared in the Journal during the last few years under this familiar heading, and as I find little or nothing has been written from this far-west district, a few observations on the experience gained within twenty miles of the Land's End may add something to the common stock of notes on Rose-growing.

The soil of the district cannot by any means compare with the fine loam of the Devon Rosery, or that in which Messrs. Cranston, Turner, Paul, Smith, or Dickson contrive to grow such grand flowers, but is frequently very shallow, stony, dry, and mineralised—in fact, nothing can be more unpromising for a good rosery than the clay studded with cold spar, or the black soil with granite stones, which abounds throughout West Cornwall. Still, here, as elsewhere, in comes the great principle of compensation, and the proprietors receive their revenues not so much from the surface as from far below it. Within 300 yards of my own garden, for instance, the owner is receiving from the mineral products found some 600 feet down, the same annual income as £40,000 in the 3 per cents. would yield him, and this with only about four acres of surface destroyed, so that, especially if the lode prove a "perpetual," he will be solaced for the inferior quality of the soil. The climate, too, on this peninsula is too much made up of wet and wind to admit of one's depending on a good stand of Roses on any particular day; yet where there is shelter the more even temperature gives the amateur, in spite of more storms and less sunshine, a fair chance of obtaining a longer season of ordinary Roses than those districts where for a shorter time perfection can be more nearly reached.

Dwarf plants on the Manetti stock are unquestionably the most suitable form of growth here, and when planted with the collar of the bud some 2 inches below the surface, and liberally encouraged with rich manure, they soon become strong established plants. No manure with me does its work so thoroughly as that from the pigs' yard; an ample allowance of this I give at planting, and again every spring, after having carefully stripped back the soil a little; then with the further stimulus of liquid manure of various kinds during the blooming season, sufficient vigour is obtained. Syringing in the early part of the season cannot be dispensed with, but when well followed up for a short time it stamps out the green fly, mildew, and orange fungus: as they hardly ever make their appearance here, I presume the aforesaid winds disperse them.

As to pruning, I defer the spring work as long as possible, so that the young growth may not venture forth, if it can be prevented, before the March gales have had their day. Summer knife-work seems to be so dependant on the habit of the individual plants that no general law can be laid down.

The past season has been a very good one for Teas;

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Madame Falcot, Souvenir d'un Ami, Madame Margottin, Vicomtesse de Cazes, Devoniensis, Alba rosea, Madame Willermoz, Safrano, Canary, Adrien Christophe, and Sombreuil have all done very well. From early in June up to the present time they have been continuously flowering, and even now have several blooms upon them. Madame Margottin, Vicomtesse de Cazes, Safrano, and Canary have often been literally covered—I have counted more than fifty buds and flowers on each of these more than once during the season. They are trained against south-aspect trellises, in the full enjoyment of air and sun. Alba rosea, so lovely in form and tint, although hardly ever without a flower, has been the least robust and floriferous, whilst Madame Willermoz, Devoniensis, Souvenir d'un Ami, and Sombreuil may be said to hold, for their blooming properties, a middle place. Montplaisir and Marie Sisley have this year failed to open a single good flower. I believe them to be too uncertain for outdoor culture.

I have seen no notice from anyone of Gloire de Bordeaux. I find it a bad opener, but exquisite in the bud; the rich satiny white centre peeping coyly through the setting of rosy outer petalling causes it frequently to be in demand for purposes ornamental. Its growth is particularly vigorous, making it a good climber, its foliage deep-coloured and well-formed, something like old Sombreuil, and during the past winter it kept its foliage in a most unusual manner, being fairly an evergreen. I should like to hear what experience others have had of this Rose.

The useful Noisette Céline Forestier, with its beautiful clusters, is a valuable Rose, at this time of the year especially, and when trained to an arbour or otherwise where some of its blooms can open in comparatively dark recesses, they are frequently of a yellow not much inferior to Maréchal Niel. Triomphe de Rennes is too apt to lose its leaves, and too stubborn a bloomer to be of any value to me.

The Bourbons, Acidalie and Souvenir de Malmaison, scarcely ever fail, being valuable autumn Roses. Now, and for a month past, with Acidalie and Sombreuil well in flower, there has been no lack of white Roses.

As to Perpetuals, each time I have shown, the following order for a dozen is the rank they filled and won with me. 1, Marie Baumann; 2, Gloire de Dijon; 3, Charles Lefebvre; 4, Madame Rothschild; 5, Exposition de Brie; 6, La France; 7, Mademoiselle Marie Raby; 8, Countess of Oxford; 9, Duke of Edinburgh; 10, Baronne de Maynard (a Bourbon, by-the-by); 11, John Hopper; 12, Paul Neron. Numbers 5 and 7 (excepting the reference to 5 by Mr. J. Hinton, 19th of September), I have not seen noticed in the Journal by anyone. They have been very hard to beat here, especially No. 7. Not only are the colour and form of this Rose exceptionally good, but the proud way the stem bears its bloom is a great charm. This Rose must take a high place in all collections, unless the habit of my plants happens to be unusually good. Marie Baumann has flowered more show Roses this season than any other Rose; scarcely has an inferior bloom appeared. Madame Rothschild has proved more

No. 1254.—VOL. XLVIII., OLD SERIES.

single this year than last, but when half-open its unapproachable tint and shell-like petalling tend to keep it in the front rank. *La France*, so far, is worth all the praise that has been bestowed upon it, although I cannot call it a good autumn bloomer. Charles Lefebvre and the Duke of Edinburgh have both the fault of sending up a single gross shoot, to the detriment of the rest of the plant, but their blooms are often indispensable to a show-box. Paul Neron has carried the largest *Roses* I have so far succeeded in growing, but, *per contra*, the blooms are few and far between. Alfred Colomb has not proved a good show *Rose* with me this year, although it rarely fails. Felix Genero is, however, a downright failure. I shall remove it into the shade next year to see what that will do; it was trumpeted a good deal at the start, but its spots and discolours so badly as to have always a disreputable seedy look about it. Général Jacqueminot does good duty, and ranks as a favourite; Pierre Notting is a sparse bloomer, but on the whole a valuable *Rose*; Prince Camille de Rohan, Empereur de Maroc, Souvenir de Dr. Jamain, Fisher Holmes, Sénateur Vaisse, Xavier Olibo, Comtesse de Chabillant, and Eugène Appert, furnishing, as they do, fine colours and good form and foliage, ought not to be lacking in a rosery. Charles Verdier, a *Rose* rarely mentioned, has too many good points to be overlooked; it is vigorous in habit, and good in form and colour.

Boule de Nieve and Mademoiselle Bonnaire I should not like to be without, although the latter tries one's patience at times. I am now told that the only plan to have a stock of vigorous plants is to bud some every year, and then for the first two years of their existence they will flower well. Is this so? Anna Alexieff certainly carries a goodly number of flowers, but few or no choice blooms. Abel Grand and Marguerite de St. Amand I should not like to lose, they are rarely without good flowers, especially the latter, which I take to be oftentimes a first-class *Rose*. Louis Van Houtte and Marquise de Castellane happen to be weakly plants and so have not had a fair trial, but I am sanguine that next year they will hold their own amongst the best. John Hopper, I suppose, no one ever dreams of being without, or good old never-say-die Jules Margottin, which never will believe winter is come, but will persist in sending out its cherry-bright blooms when all its kindred seem to say, "Rest and be thankful." As to dear old Gloire de Dijon, thy title is a misnomer! thy glory is too universal to be that of Dijon alone! Even here, in Western Barbary, thou art the glory and delight of old and young. No soil, no climate, seems to daunt thee, but thou sheddeth thy glory lavishly, be thou cultivated or neglected. Take thee all in all, thou art very queen amongst the queen of flowers.—CORNUBIA.

GRAPES AT DRUMLANRIG.

WHILE on a recent visit to the famous gardens at Drumlanrig, the noble seat of the Duke of Buccleuch, Mr. David Thomson, the eminent horticulturist and gardener there, showed me some of the finest black Grapes I ever had the pleasure of seeing. They were of a variety which is little known, named Seacliff Black. Two rods have now matured their second year's crop with six magnificent bunches on each, which will average from 4 to 10 lbs. a-piece—40 lbs. to the rod, or 80 lbs. combined. These, with their large shoulders and fine symmetrical form, and with berries large and equal in size, their jet black skins completely obscured with an exquisite coat of bloom, constituted objects highly worthy of admiration, and showed the extreme of perfection in Grape-growing. The variety thus so fertile originated at, and was named from, a place called Seacliff, in East Lothian, whence Mr. Thomson obtained it while at Archerfield, where I have seen it in fine condition, but never in such excellency as at Drumlanrig; indeed the Glasgow International Show, with its predominance of Grapes, contained no such superb examples. In habit and constitution this Vine somewhat resembles, yet is quite distinct from, the Barbarossa (Gros Guillaume), a good late keeper, and in flavour the fruit is an improvement on that variety.

Contrary to my expectations, which were based on a report which I perused some time ago regarding that wonderful new Grape the Duke of Buccleuch which Mr. Thomson has on trial from his brother, the raiser, in which it was then represented as being "spoiling," it was still, though ripe in the beginning of July, hanging in an excellent state of preservation, and appeared likely to keep in the same condition for as long again.

Madresfield Court Grape, the bad behaviour of which I have

personally experienced, observed elsewhere, and heard much about this season, is, after being accorded the best of treatment, rooted out and utterly discarded at Drumlanrig, to give place to those more worthy and of a less peculiar character.—M.

CULTURE OF THE JERUSALEM AND GLOBE ARTICHOKE.

If anything is worth growing, it is worth growing well. Such was the remark made and often impressed upon me by one of the best gardeners under whom I served, and if this remark need be applied to any one subject more than another it is to the garden Artichokes; for it is common to meet with one or the other, or both, planted in most unworthy and unsuitable places, and where a fair produce is impossible. That the Artichokes will pay for a little extra labour applied to their culture is beyond question, and instead of being planted in the poorest of soils, and in the worst of situations, under trees and in shady out-of-the-way corners, as is too often the case, they should have the benefit of a well-selected open spot, with deep soil—tolerably rich, and close in texture.

In making a plantation of the Jerusalem Artichoke the ground should be trenched 2 feet deep in the autumn, and laid up roughly for the frost to penetrate it during the winter. From the middle of February up to the same time in March is a good season for planting if the ground work well; but if not, the first opportunity should be taken to break the soil tolerably fine with a rake or three-pronged hoe; then draw drills 3 feet apart and 6 inches deep. The sets should be placed 1 foot apart, and for them the best and most shapely of the stock should be selected. When they are earthed over, the ground may be raked down level, and a crop of Radishes or Lettuces can be taken off before the Artichokes appear, but afterwards they must be allowed to have the ground to themselves. Keep it well hoed, and if dry weather should set in while they are growing fast abundance of water must be applied. The aim should be to give them one uninterrupted period of growth until the time of ripening-off in September. The top growth may be cut-off within 6 inches of the ground when the Asparagus beds are cut over in autumn; if the tubers are to remain in the ground and be taken up as wanted, it is a good practice to earth them up like Potatoes, and when hard frost sets in throw some loose litter over the rows, as done in the case of Celery. The usual practice is to take up as many tubers as are likely to be required during hard frost, and store them in earth or sand in a cool shed, to be used when wanted. The Jerusalem Artichoke is despised in far too many instances, while in others it is grown largely and well. Common and unimportant as it may be considered by many, it is, nevertheless, a delicious vegetable, and it possesses qualities both in produce and flavour which a judicious system of cultivation will greatly develope.

Coming now to the Globe Artichoke we have a different subject to deal with, although in the preparation of the ground the conditions are precisely similar, but the plantation should be made in a moister situation with, if possible, a greater depth of soil. In dry, shallow, or gravelly soils this vegetable does not succeed, yet, as it is liable to injury from frost, a dry situation is a safeguard in winter, but the produce in such places is not satisfactory. I have usually prepared the soil as already stated, but more manure is worked into it. The plants are obtained from old stools divided or suckers from other plants; the latter mode is preferable. The beginning of May is a good time to plant. I prefer planting in patches of three or more plants at about 4 feet apart every way. These young plants will require attention at first to get them to start satisfactorily. During the summer the ground must be kept clean, and water given when necessary. When growth is completed in autumn my plan has been to protect the stools by a coating of half-rotten stable-manure, and cover the whole of the plantation or bed with loose litter, or fern, which to a considerable extent prevents injury by frost. In the spring they throw up their crop of globular heads, the size and quantity of which will be regulated by the strength and size of the stools. According to the pains that have been taken in cultivation, the soil, and situation, a plantation will last from six to twelve years; but in this crop, as well as most others, young and vigorous plants produce the greatest yield and best-flavoured heads. I have found that the spring frosts are as much, or more, injurious to the Globe Artichoke than the very severe frosts of winter, the young growth is so liable to get injured, therefore the protection must not be taken away too soon.

There are two varieties of the Globe Artichoke in cultivation—one produces a dark head, and the other a very much lighter one, and the latter is the more tender of the two. I have always found that the dark sort is the more sought after.—THOMAS RECORD.

ORCHARD HOUSES.

NOTWITHSTANDING the many advantages of orchard houses over walls, it is still thought by many that a Peach ripened out of doors in a favourable season is higher-flavoured than any produced in an orchard house. Mr. Fountaine, thinking that the trees need exposure to the direct sky at night, has invented a truck on rails, by means of which the trees can be so exposed. But it seems to me highly probable that what the trees want is exposure to the chemical rays of the sun, which penetrate glass with difficulty, and which are the chief agents in ripening the fruit. I would, therefore, suggest the following simple experiment, which can be tried next year by anyone who has an orchard house:—Select two trees of the same sort, and after the middle of June expose one to the open air at night, and the other to the open sun during the day, continuing this until the fruit ripens. If there were a third tree, kept entirely in the house, the experiment would be still more interesting, and the results might be communicated to "our Journal."—G. S.

GRAFTING.—No. 12.

*Cutting-grafting on a Tall Stock (fig. 1).—*If the length of the scion is not sufficient to allow of its being placed in the ground and grafted on the stock at the required height, a pot filled with earth, or a bottle of water, may be supported at the desired height, in order to receive the base of the scion. As a proper degree of moisture should be constantly maintained at the base of the shoot, the pot is filled with gravelly sand, which is not so apt to dry up as vegetable soil.

If the operation is performed during the growing season, when the sap is flowing, we should prefer a bottle of water,

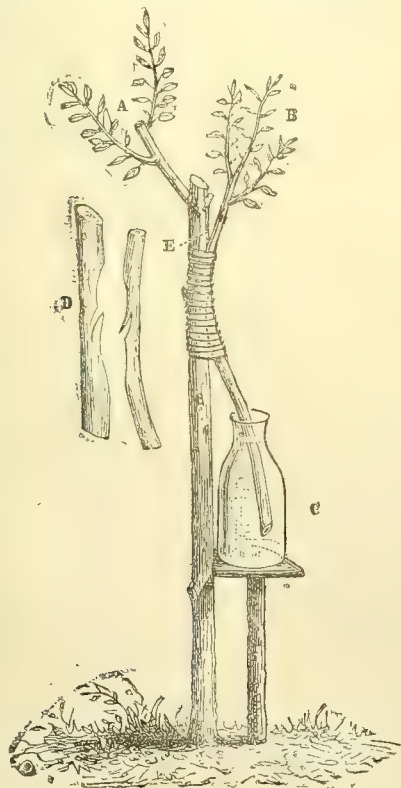


Fig. 1

c, fig. 1, at the bottom of which a layer of powdered charcoal should be placed, in order to prevent the putrefaction of the water, which, besides, should be frequently renewed. The

scion ought to be deprived of a portion of its leaves, which must be cut back to their stalks if the species is deciduous, or if evergreen half the blade should be removed. The scion is put on as in ordinary splice-grafting, and should be clayed, and shaded with paper.

The heading-down of the stock, which is begun in summer by cutting-in the branches (A) or of the leader, should only be completed (as at B) after the growth of the following year is over. At the same time the heel of the graft should be shaven off close to the junction with the stock, as the necessity for the use of water or sand is at an end.

*Grafting on the Portion of a Root (fig. 2).—*The Bignonia, the tree Peony, and the Wistaria are grafted in spring before the sap begins to flow, or in August when growth has ceased. The Chinese, it is said, graft these plants in October. Tubers or pieces of the root are taken before the rise of the sap, and are laid-in in soil. When the buds begin to swell the time for



Fig. 2.

grafting has arrived. The grafts (B) are chosen from branches of the preceding year, and are cut in a rather thin wedge shape, in order to introduce them into the stock (A), either by cleft or notch-grafting. They are bound round moderately, or not at all; waxing is useless.

The grafted roots are put in pots and kept close under a bell-glass or propagating frame. If there is any danger of drops of condensed water falling into the cleft of the graft, the pots are inclined to one side when plunged under the bell-glass or frame. After growth has begun, air should be gradually admitted. If the scion is not completely inserted, and the tuber employed as the stock is planted below the ground level, the former will produce long hair-like fibres, and as a consequence will get upon its own roots. There will then be no danger of the root of the stock producing suckers, which, however, may in other cases be easily avoided by taking off the tops of the roots of the stock, and by picking-out the latent buds.—BALLET, *L'Art de Greffer*.

A PLEA FOR GARDENERS WHO HAVE CHILDREN.

"Lord, make these faithless hearts of ours
Such lessons learn from birds and flowers:
Make them from self to cease."

THERE are, I am sure, but very few readers of the Journal who do not sympathise with the manly protest which has been placed on record against the system of seeking for gardeners who have no family. There are, of course, occasions and situations in which it is simply impossible to accept the services of a man who brings a family with him, but such cases must be but very rare. Why, then, is it that advertisements of the character to which Mr. Pocock refers appear so often? For my own part, I believe that it arises from that want of sympathy and that hardheartedness which are so often the curse of prosperity and wealth. There is a want of sympathy with the young, a want of sympathy with those who minister to our enjoyment by the sweat of their brow, that forms a very dangerous social evil, against which all well-wishers to their country should lift up their voice. Now, only those who are blessed with children, and who endeavour to train them carefully from their earliest years, can tell the exquisite pleasure which the little ones bring with them. "Every gift of God is good." A good child, a good son or a good daughter, is as great a blessing as God can confer upon man. Why, then, deny this to those who are toiling all day long close to our homes, furnishing our tables with the products of their skill, and ministering to our fancies as well as to our wants?

Married life is the highest form of life—it is perfect and entire, which single life is not. It calls out all the best feelings of our nature, makes a home and a hearth where solitude was before supreme, forms a safeguard against many a snare, and gives a pledge to society which single life cannot. But married life implies marriage at a comparatively early age, when the feelings are fresh, and the life blood beats high; and why should not such marriages be allowed? Our large families are one of the secrets of our greatness. Where the family is large, there must be prudence, and industry, and thrift, and many a virtue which hides its diminished head in smaller households;

the children, moreover, spread over the earth, subdue nature, and diffuse the English language in regions known only to the savage before.

Mr. Pocock, however, must not suppose that this crusade against children is confined to his own class. At a certain period of the year numerous advertisements appear in the clerical journals for clergymen to take the places of those who want to leave their livings for a time, and in not a few of these appear the words, "children objected to." A long discussion has taken place on this point in the leading clerical journal this very year, and I am bound to say that I think this fact proves that there is far more selfishness among the clergy, and far less regard for the younger portion of the community, than there ought to be. On the other hand, some blame must surely attach to the parents, for their children would not be so unpopular were there not some reason for their being so. How many children are allowed, among the upper as well as the lower classes, to injure and destroy everything they come near! How many are brought up in untidy, disrespectful, disobedient habits, allowed to do just what they like for a while, and then after they have become a nuisance to all around, suddenly expected to reform or to be reformed by the influence of the teacher or of the school! Let parents, then, learn that children, like trees, require pruning and disbudbing and watching from their earliest years. Culture to be good must be gradual and progressive, not hasty and capricious; then in due time the tender plants will grow hardy, blossom, and bear fruit.—A CLERGYMAN.

THE thanks of all gardeners are due to the valued contributor to "our Journal," "WILTSHIRE RECTOR," for the kind and able manner in which he has come forward to advocate the cause of those members of the profession who have families depending upon them for their daily bread. I trust the disinterested opinions which he has so forcibly and truthfully expressed will induce those employers who have hitherto declined to accept the services of a gardener with a family to reconsider their objections, and when they next require a servant in that capacity to give one who is so situated a trial, if his professional ability and other qualifications are equal to the trust expected from him. Should they do so I feel assured that they will be no worse served; on the contrary, I believe they would find that their interests would be, if anything, more studied, owing to the natural disinclination of anyone with such home ties to make any change if it can be avoided, entailing, as it necessarily does, an amount of expense that too frequently can be ill spared.

Though from my boyhood until the present time I have followed horticulture for a living, I am at a loss to conjecture why this state of things in that pleasing yet arduous pursuit has arisen, especially so as it does not operate to the disadvantage, so far as employment is concerned, of other professions and trades. A man in any other calling seeking for work is not asked, "How many children have you?" and "the age of the youngest?" as they would be considered questions not connected with the point at issue—viz., the fitness of the applicant to undertake certain duties in which his children would not take part, and this I submit in common justice ought to be the position of a gardener in a like case.

For the credit of human nature I trust that employers will no longer consider a servant's family as only another name for a social evil, and that the latter, by training their scions in the proper direction, will insure their becoming goodly plants, and no eyesore to even the best-conducted establishment.—R. M. G.

TURBAN RANUNCULUS.

REMEMBERING that in former days we knew of but two kinds of Turban Ranunculus, and seeing that in many catalogues a considerable number of varieties were announced, I determined last season on going into the subject; and through the kindness of some of the principal bulb-importers I was enabled to give the subject a fair trial. Messrs. Barr & Sugden, Carter and Co., Cutbush & Son, and Sutton & Sons were good enough to send me a few roots of each of the sorts advertised by them. I found the following names included—Black, Carmine, Hercules, Grandiflora, Merveilleuse, Scarlet, Souci d'Or, Seraphique, Turban d'Or, Mufti, Orange, New-spotted, and Variegated. After all, the fact still remains that there are really only two varieties truly Turban worth cultivating—the scarlet and the yellow—not that the other varieties mentioned above

are not pretty, but they are not true Turbans; they are, in fact, large and early-flowering varieties of Persian Ranunculus, having to some extent the beautiful form of that type. Hercules, for example, is a fine large white, and whether in the bed or cut is very taking. The Carmine, Crimson, or Grandiflora is also a handsome flower; so is Souci d'Or, or New-spotted, a light-coloured flower with small dark spots, like some of the later-blooming kinds. There is another which I see in some lists is included among the Persian, but which if planted in November will bloom at the same time as the Turbans, I mean Prince Galitzin, or Prince Eugène as it is sometimes called. The colour is a very bright orange yellow spotted with brown; it is a most effective flower, and, in fact, a very pretty stand may be made up of Hercules, Prince Galitzin, Souci d'Or, and Jasmine.

It is a pity that the Royal Horticultural Society does not include these flowers in the very varied lists of subjects for which prizes are offered. Nothing can be more simple than their cultivation; only let the ground be manured with well-rotted cow dung in the autumn, the tubers planted in November, and the beds kept clear of weeds, and they will amply repay the little trouble expended on them, for nothing can be more brilliant than a well-filled bed of the scarlet Turban, and they can be easily removed before the beds are required for their summer occupants.—D., Deal.

VARIETIES OF POTATOES DISEASED AND UNDEASED.

I CAN fully endorse the experience of "T. S. C., Bristol," as to the soundness of Sutton's Flourball Potato. I have grown seven kinds of Potatoes this year, and find it the only one free from disease, and also the only one eaten by the grub; American Early Rose next best; Paterson's Victoria two-thirds diseased.—S. B.

Of my Potato crop in a light loam and gravelly subsoil I have Myatt's Prolific Ashleaf free from disease; York Regent but little affected, one or two tubers to a root diseased; Dunbar Regent, half the crop lost, some roots without a sound tuber. Sutton's Red-skinned Flourball is entirely free from disease and a good crop.—F. W., Hertford.

NONE of my early Potatoes were affected by the disease. I grew Prince of Wales Kidney as a second early, had a very heavy crop, but nearly three-fourths of the tubers were diseased. Early American Rose produced a good crop, and very few tubers were affected. Sutton's Red-skinned Flourball gave me the finest crop of all; the tubers numerous, no small ones, and not one diseased. I had a few sets of Climax, which have turned up with but few diseased.—ST. EDMUND, Bury St. Edmunds.

THE state of the Potato crop mentioned by "T. S. C." is almost identical with that of my garden here (Ross). I had the bulk of my Potatoes taken up last week. Paterson's Victoria were half bad, Racehorse and Ebrington the same, Flourball nearly all good; the yield from half a bushel of seed cut into sets with only one or two eyes, was four bushels of fine Potatoes, none being too small to plant, and the majority the size of a man's fist. Worcester Silks were about two-thirds good. I found the same kind of grub in many of my Potatoes, leaving little but the skin. The crop generally in this neighbourhood is very bad.—M., Ross, Herefordshire.

I BEG to inform you that this year the Early Fortyfold was far worse than any other kind, and the Dalmahys also were more or less affected; the other varieties planted were scarcely touched—viz., King of Kidneys, Giant Kings, Rocks, and Late Fortyfolds. Buck's-eyes were quite free from disease.—J. BAZELY, Pulborough, Sussex.

IN compliance with your wish for information respecting varieties of Potatoes which have escaped the disease, I beg to say that in a large quarter where some six or eight varieties were all but annihilated, a single row of the American Rose had scarcely a diseased tuber. It is, however, waxy in quality; but in such seasons of disease as this, it is not so much a question of quality as of a crop at all. Jackson's Red in another quarter, with several varieties that scarcely yielded a sound tuber, was next to entirely free from disease. It is singular that

these, the only two red Potatoes grown here, have withstood the scourge, while scarcely the seed could be picked from the white varieties.

The disease is worse generally here this year than ever it was known to be. The very wet and sunless character of the season

has been such as to lead to the expectation of a bad Potato season. From January 1st to September 30th we had 51 inches of rain, and next to no sunshine the whole season. Early and late Potatoes have been alike destroyed, except the two referred to.—D. THOMSON, *Drumlanrig Gardens*.

THE CONTINENTAL SEED GROUNDS OF MESSRS. DICK RADCLYFFE & CO.

THESE are at Erfurt, in Prussia, and the firm have sent us the accompanying illustration. They were founded in the beginning of the present century by Carl Appellius, a celebrated floriculturist, who soon became noted in England for his choice strains of German and French Asters, German Stocks, double Wallflowers, Carnations and Picotees, Cockscombs, Balsams, Pansies, &c., and who was successful enough to amass a fortune which he now enjoys. The grounds then passed into the hands of Ferdinand Jühlke, another very successful floriculturist, who was chosen by the Emperor of Germany to be Director of the Botanic Gardens of Potsdam, where he now resides. The business then passed to the two chief assistants (Herrn Putz and Roes), who had carried on the business successfully under both proprietors, and who now, together with Mr. Dick Radclyffe (who was first introduced to the trade in this nursery), have opened a branch establishment in High Holborn, which is under his management.



Messrs. Dick Radclyffe's Seed Grounds.

That part of the nursery situate inside the town lies to the right of Andreas Thor, one of the strongest outlets to the fortress, and the plant houses are built directly under the protection of the fortifications and earthworks. A large portion

of the ground is occupied by extensive lengths of covered staging for pots filled with Stocks, Wallflowers, Balsams, Carnations, and Picotees.

CONIFERS AT LINTON PARK.

(Concluded from page 248.)

CEDRUS DEODARA, planted 1844, is 49 feet high, and there are several others upwards of 40 feet. They are all densely clothed to the ground, and all more or less approaching the Lebanon type. Amongst younger trees is one 16 feet high, planted in 1865, and it has made a very rapid growth the last three or four years.

CUPRESSUS LAMBERTIANA, or *C. MACROCARPA*, planted 1854, is now 45 feet high, a fine densely-clothed tree of a sort of bulbous conical outline. This is one of the most remarkable trees we have, not less for its rapid growth than for its deep green hue. It has coned for several years, and did not suffer in the least in the winter of 1866-67, but was injured in that of 1866-67. I am of opinion that this tree ought only to be planted when of a small size, as it transplants badly; and that its tendency to form tap roots ought not to be checked, as they seem to form the best safeguards against its being overthrown by high winds. We have younger trees than the above, equally fast-growing. One, upwards of 24 feet high, was only planted in 1865, having made an average growth of upwards of 3 feet each year.

CUPRESSUS KNIGHTII, also a fast grower, but not so hardy as *macrocarpa*. The specimen here, planted in 1865, is 22 feet high. It is more cylindrical in outline than conical, but has a tendency to push up a great number of leaders, and I fear, excepting in very favoured situations, it will never attain the dimensions of a large tree. Its rapid growth in summer has been more than once checked by a severe browning in winter, when other kinds have entirely escaped.

CUPRESSUS LAWSONIANA.—Several trees upwards of 20 feet high, but this is nothing very particular. My only object in mentioning this species is to say that I am of opinion it has been much overpraised, for out of something like two hundred plants we have of it, of various sizes, from 8 up to 20 feet high, there is not more than one or two that I would consider perfect, they having all a naked side in some part or other.

CUPRESSUS CORNEYANA, 15 feet high, planted 1865, remarkable for its singularity of growth.

ABIES MORINDA OR *SMITHIANA*, 54 feet high, planted 1844, densely clothed to the ground, and certainly in a more promising condition than some common Spruce Firs planted at the same time as nurses, and occupying a similar position. I have, nevertheless, my doubts whether this species will not eventually become ragged and unsightly, and eventually die at an early age, the same as the Spruce does with us; otherwise it is a pretty tree, its lowest branches, resting on the ground, having the same rich glaucous hue as its upper tier, and forming a compact cone. It has only occasionally borne fruit, which is much longer than that of the common Spruce, and more pointed.

ABIES DOUGLASSII.—The fine tree described by Mr. Fleming as growing at Dropmore must, I am sure, make all growers of such things envious, for a tree of any kind 102 feet high is very unusual, native or imported. Unfortunately, it is one of the kinds that do not do well with us, for although they start tolerably well, they seem to die off at an early age, so that we have no large specimens of it. I expect there is something in the soil unfavourable to it, as the common Spruce, to which it is allied, also dies off at an early age.

CRYPTOMERIA ELEGANS, planted 1866, upwards of 12 feet high, and very promising, as likewise are other specimens 10 and 11 feet. It is quite hardy, and a great acquisition to the pinetum.

CRYPTOMERIA JAPONICA.—The finest plant we had here was broken during a high wind upwards of four years ago, it being then upwards of 40 feet high. Smaller ones we have, but none so promising as that one was. *C. Lobbi* I take to be only a variety of this.

RETINOSPORA PISIFERA, 15 feet high, planted 1865, is a promising fast-growing tree, well furnished from bottom to top with

closely-packed branches. It promises to become a large tree whilst its Fern-like foliage is very graceful.

RETINOSPORA OBTUSA, planted at the same time as the last-named, is 10 feet high, consequently it is a less rapid grower; in fact, I expect it will hardly emerge out of the shrub condition, but it is very graceful.

RETINOSPORA LEPTOCALDA.—A dwarf mountain tree, seemingly well adapted for a permanent place in a geometric garden. About 2 feet high is the total altitude attained in some half-dozen years. *R. squarrosa* is of a rich glaucous hue, but its growth seems more in a lateral than horizontal direction, so that I fear it must also be classed amongst the shrubs.

THUJOPSIS BOREALIS, 23 feet high, planted 1860, is a handsome hardy species of the darkest green hue. It is also of quick growth, and I believe is regarded as more hardy than many native trees. In outline it is a slender cone with a distinct leader, and is altogether a plant that ought to be in every collection.

THUJOPSIS DOLABRATA.—Upwards of 6 feet high, and promising to go on; planted in 1866. This tree is not by any means a quick grower, but it may, perhaps, like some of the *Piceas*, make up afterwards for the tardy growth of its early days. It seems to be quite hardy, and the specimen alluded to is starting with a decided leader; but two or three others we have seem unwilling to emerge out of the bush form. I do not yet despair of this specimen taking a good position. The distinctness of this species entitles it to cultivation, and if it will only grow fast enough it will be very handsome.

THUJA LOBBI, planted 1860, is now 35 feet high, straight and tapering as a fishing-rod. It is certainly one of the finest, if not the very best, of the *Conifers* introduced of late years, competing, in my opinion, with the *Wellingtonia* in that respect, with a handsome foliage, equalling many of the choicest *Ferns* in the manner it gracefully droops over horizontally, differing from the generality of the *Arbor-Vitæ* section, whose foliage stands in a somewhat stiff vertical position. It also confines itself to a single leader, which rises perfectly upright, giving the plant the tapering spiral form so different from most other trees. The diameter of the specimen noted is not more than 8 feet at its widest part, and no one could wish it stouter, as there is no lack of branches the whole way up. We have several other trees smaller than the above, all of the same character, and occupying different positions, but all alike good. Might I ask if anyone has a taller tree of this species than that referred to? I consider it identical with *T. Menziesii*, but the species named *T. gigantea* is with me a much inferior species, and certainly improperly named.

LIBOCEDRUS CHILENSIS, 17 feet high, planted in 1858, is a pretty-growing species, but not destined to become a large tree, as the specimen here was injured in the winter of 1866-67. Its graceful form and silvery-grey appearance, nevertheless, entitle it to attention; but where only a limited number of *Conifers* are grown this one cannot compete with either of the two last named, its lack of hardiness being sadly against it.

ARAUCARIA IMBRICATA.—Planted about 1830, now 34 feet high, a fine tree, has borne cones for several years, but few of the seeds good, owing to the absence of the male plant; yet one of the latter having coned last year, I am in hopes of having some perfected seed. The tree here is more cylindrical than conical in outline, with a rounded top; the leader, however, is perfect in every sense. I think the site is rather too dry, as it has lost some of its lower limbs; nevertheless, it is a fine tree, and has never appeared to have suffered in the least from hard winters. We have other trees also good, but smaller.

WELLINGTONIA GIGANTEA, planted 1860, is now 31½ feet high and 25 feet in diameter; it occupies a very exposed position, which this tree seems well suited for, as we have some others planted out singly in the park also doing well. I do not give the height of the above as anything remarkable, as there are many higher; we lost our best specimen in 1868 when 27 feet high. The tree first referred to has hitherto been in the best possible health, but the death of the 27-feet specimen has left an unpleasant notion that others may also die; still I cannot perceive any tokens of disease among them, though they are upwards of one hundred in number, exclusive of small ones. I hope, therefore, there is no danger of our largest specimen dying at an early age from constitutional debility. Nothing possibly can be more healthy than the general character of most of the trees we have; an avenue of forty specimens, planted in 1866, contains some upwards of 20 feet high. I may add that the whole of the specimens present the same correct conical outline, with now and then one a little less in diameter at the surface than it is 2 feet up, forming a sort of bulbous cone. I have only noticed one amongst the many trees we have as producing cones, and that one has done so for many years. The *Wellingtonia* is certainly one of the fastest-growing trees we have, not so rapidly attaining height as *Thuja Lobbi*, but exceeding it and all others in the formation of bole, which, in point of thickness at the bottom, far exceeds that of any other tree that I know, and tapering gradually up becomes in itself no bad

representation of a cone. Its thickness at the bottom certainly unfits it for the many purposes for which poles are applied; but, on the other hand, it certainly enables the plant to withstand any amount of wind, for the single trees we have of it do not seem in the least affected by their exposure. Of the quality of its timber little need be said, but as time goes on we shall see whether it be found capable of withstanding the changes our climate is liable to. Let us hope such will not be the case.

In drawing these notes to a close I may observe that the present season seems to be with *Conifers* the most unfruitful of any I remember, as we have comparatively few in fruit, excepting such as those on which the cones hang more than one year. Amongst the latter class is the *Araucaria*, which has a number of cones bursting at the present time; but I am not at all sorry at their non-bearing, for I cannot but think the early fruiting of *Conifers* is a token of debility, and I fear such trees will not attain a great age. I should have been more pleased had *Thuja Lobbi*, *Thujopsis borealis*, and some of the *Retinosporas*, not been fruited so early. I am glad our fine *Picea Pinsapo* has only once produced cones, and the *Deodars* not at all, excepting the male catkins. Some growers speak with exultation of their trees bearing fruit, but I look at it in quite another light, and would like to see the tree attain a large size before it commenced to bear.

Having carried these remarks to a much greater length than was intended, I cannot, however, conclude without joining with Mr. Fleming in paying a tribute to Mr. Frost's long-continued skill and industry in bringing together and managing so well the large collection for which Dropmore is so famous. I hope, whenever the worthy pioneer of *Conifer* cultivation retires with his laurels, there will not be wanting those who will feel they are only performing a duty to their calling in recognising his labours in some becoming way. From Mr. Fleming's remarks, I am glad to find that something of the kind is intended, as no one, certainly, is better entitled to a hearty greeting than the energetic planter and manager of so much that is good at Dropmore, and the envy of a large portion of the gardening community.—J. ROBSON.

DOUBLE GLAZING.

IN answer to "J. M." and others, I must reply that my own experience of this has been limited—too limited to warrant me in advising you to adopt it with all your houses; better try a part first. At one time I did a good deal with double sashes, and in cold weather I found that we gained from 5° to 10° in temperature over the single sash; but to do this it was necessary to do something more than place one sash on the top of the other. I placed broad list on the top and sides of the under sash, and thus air was excluded. In the open space in front I also had a waterproof roll to close the opening between the sashes there. Double glazing—that is, the planes of glass from 3 to 4 inches apart, will in any case be an advantage as respects temperature, but it will act most effectually when little or no air circulates in the space between the glass. There is not so much advantage when the air passes freely from front to back in the enclosed space. In double glazing such a large roof as yours, the outer glass should be in sashes and moveable, otherwise, if not very close, the under glass might become dirty and could not be easily cleaned. If the glass of both inside and outside roofs were kept clean, as far as a limited experience goes the double roof with clear glass will not affect the ripening of the fruit. I twice used double sashes for a Vine pit, and the Grapes ripened well. I adopted it to secure heat. I am not personally aware of any case where a double roof was dispensed with when the glass could be kept clean.

In a conservatory double glazing would help you, more especially if the conservatory was small, and there was a good fire in the dining room, with the glass door left open.—R. F.

[The object our correspondents have in view is the exclusion of cold, so as to save fuel now that coals have so far advanced in price. We shall be obliged by any of our readers stating their experience on this.—Eds.]

BOILERS AT THE ROYAL HORTICULTURAL SOCIETY'S BIRMINGHAM EXHIBITION.

No. 3.

IN continuing our notes on the horticultural boilers we come next to the saddles, and modifications of the saddle, and we will take them in the order in which they are placed in the catalogue.

First comes Stand 47, Mr. Frederick Mee, Smithdown Road, Liverpool. He showed three double saddle boilers of different

sizes, one of which, 3 feet long, was entered for competition. The boiler, as *fig. 1* shows, is made in the form of one saddle boiler over another. It is made of welded wrought iron, and has in connection with it a front sole-plate, wrought-iron tubular fire-bars, and a hollow terminal back. These connections have an independent circulation of their own, and are fitted with

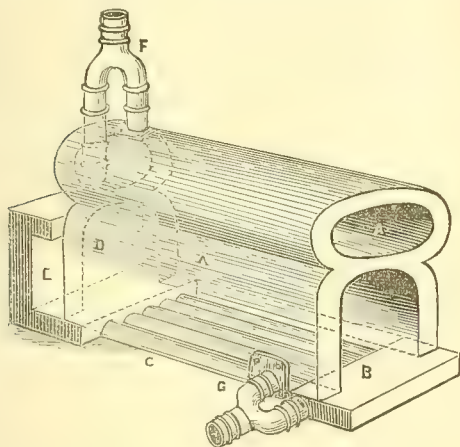


Fig. 1.

- | | |
|---|------------------------------------|
| A (<i>fig. 2</i>) Wrought-iron saddle boiler. | D Hollow back, forming side flues. |
| A A (<i>fig. 1</i>) Double saddle boiler. | E Side flues. |
| B Hollow dead plate. | F Flow connections. |
| C Wrought-iron hollow fire-tubes. | G Return connections. |

separate flow and return sockets, so that they can either be worked separate from the boiler (see *fig. 2*) or in connection with it. This set of sole-plate, tubular fire-bars, and terminal back can be fixed to any existing boiler, so as to increase its power. This boiler is made so that the products of combustion, after passing through the upper saddle, are passed, by means of

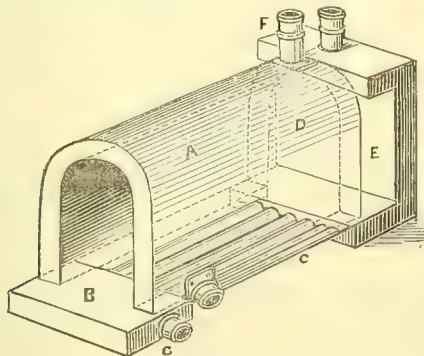


Fig. 2.

side flues, round the outside of the boiler as well, and as the two saddle boilers are continuously welded together, there is a very perfect circulation. In our opinion, for the price of the boilers, they were as efficient and useful as any exhibited, and as they are fed from underneath by an ordinary furnace door, they will burn slack and ashes, and any kind of coal.

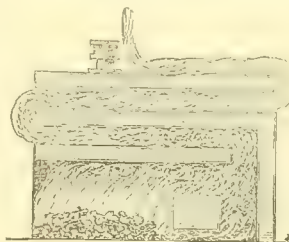
The next boiler was Stand 48, a large Trentham Improved Cornish boiler, fully 8 feet long, which seemed big enough to heat a ten-horse steam engine. Another boiler, a saddle and flue, shown on the same stand by Mr. Gray, of Chelsea, seemed a much better form and more serviceable, and we regret it was not entered for competition.

The next stand we come to is Stand 49, where Mr. Cannell exhibited his boilers, of which the horticultural world has heard so much lately, and if they were all that Mr. Cannell says of them in his circulars, we need not go any further for boilers, or trouble our heads about any more improvements.

Now, we are under the impression (it may be an erroneous one), that something was known about the make of boilers even before Mr. Cannell turned his mind to the subject, and we are equally sure that many of the merits he claims for his boiler are purely imaginary, and many of the so-called improvements are based on a wrong principle. The interior of the circulator, as represented in Mr. Cannell's engravings, is not much different from the Witley Court boiler, but instead of being made of wrought iron and connected together at the sides, the boiler is cast in different parts, and connected together by small syphon

bends, screwed on with indian-rubber rings on the outside. Mr. Cannell seems at once to settle the vexed question with regard to cast and wrought iron by referring to the greater durability of cast iron over wrought; but then he forgets that a greater amount of iron has to be heated before the water is heated. However, we will not enter upon the comparative merits of cast or wrought iron, but deal with the boiler itself. Now the circulation in the boiler is so much impeded by the water having to traverse so many horizontal surfaces only connected by small syphon pipes, and this throughout the whole boiler, that the circulation must necessarily be slow; and owing to the junctions with indian-rubber rings on the outside, the products of combustion are not passed round the outside of the boiler. If Mr. Cannell thinks he can extract all the heat from the ignited fuel before it passes out of the flues from the inside of his boilers, he is utterly mistaken; and a flue round the outside of the boiler will always be more economical than packing with non-conducting materials, as hair and sand, which Mr. Cannell recommends. As for the simplicity of the castings making them less liable to crack from unequal expansion, that will require the test of time; but Mr. Cannell says in one part of his circular that his boiler is even more lasting than the common saddle, many of which have stood the test of thirty years' experience. We are perfectly certain from their construction that there will be too much difference of temperature between the flow and return pipes, and that when any range of houses is heated by the return pipes a great additional amount of piping will be required. One advantage Mr. Cannell's boiler has, and that is, that it contains a great amount of water, and would be a good reservoir for heat after the fire is out; but there are many other boilers that fulfil these conditions, and we can see no advantages which this boiler possesses over the Witley Court, or Hartley & Sugden's, or Mee's, or Ormson's.

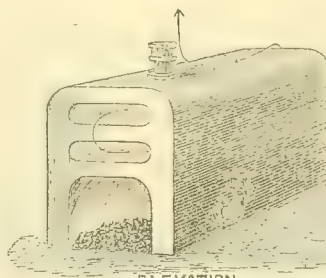
The Stands 50 and 51 were respectively Mr. Harlow's and Mr. Truss's, whose boilers we have already alluded to; and next,



SECTION

Fig. 3.

tendency to crack from uneven expansion. As there are



ELEVATION

Fig. 4.

no small connecting syphon pipes outside, the flues can be taken outside the boiler, so as to exhaust the heat from the products of combustion. Owing to the whole of the parts being connected together, so as to form a continuous water way, the circulation will be good. We give illustrations of it (see *figs. 3 and 4*), and do not hesitate to recommend it as an efficient and economical boiler, which will burn almost

any kind of fuel. The next stand, No. 53, contained the spiral pipe boiler of Mr. Deard's to which we have already alluded.

A NATURAL HOTHOUSE.—About a century ago a coalpit near Sheffield took fire and had to be walled up, but still continued to burn. "It is an ill wind that blows no one any good," and the farmers found that their crops over this pit were accelerated in growth by the heat. This acceleration has, however, ceased, and it is thought that the hundred years' fire has at last burnt itself out.

MUSHROOM POWER.—The offices attached to our factory have, until the month of March last, been occupied as a dwelling house. Since that time the room which had previously been used as a kitchen and general living-room, with a fire in it every day, has been a lumber-room without fire, and has become very damp. Moving aside a piece of furniture, we discovered that a length of skirting at the side of the chimney

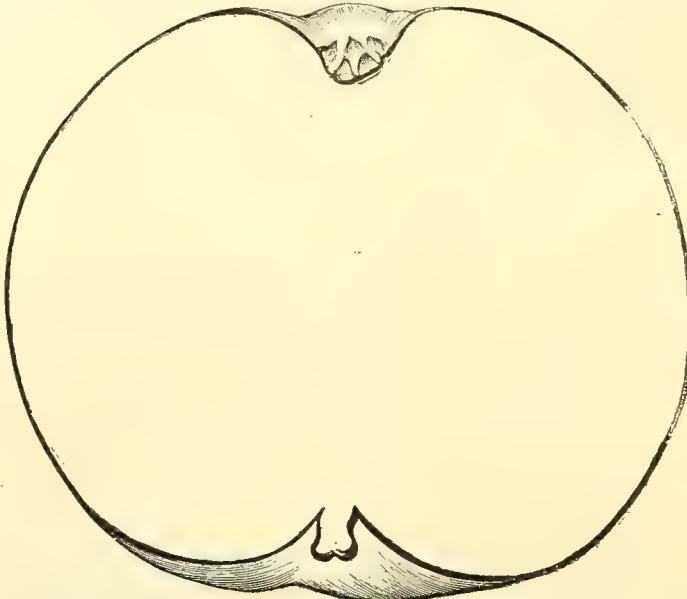
breast was forced out of its place some 3 inches. On examination were found two very fine edible Mushrooms, about $6\frac{1}{2}$ inches in diameter, very thick, just fully developed, and in a perfectly healthy condition; their form was, of course, somewhat compressed, and presented the appearance of the hat to which the ladies have given the name of Dolly Varden. How can the presence of these fungi be accounted for? There is no clear space beneath the floor, for it is of tiling laid on a considerable thickness of engine ashes, a material not at all likely to contain the spawn of the Mushroom. Can it be possible that they could have proceeded from the deposit of mice, or from the rotten wood of the skirting itself, which is decayed at the place where they were found? We content ourselves with stating the facts, leaving others more knowing in the habits of fungi to account for what appears to be a strange mode of introducing such an excellent esculent into the kitchen.—CRANSTON & LUCK, *Horticultural Building Works, Birmingham.*

YORKSHIRE BEAUTY APPLE.

ANOTHER of the local varieties of Apple found about Worcester, and sent us by Mr. Richard Smith, is the Yorkshire Beauty. It is a fine, large, early culinary Apple; the tree a great bearer, perfectly hardy, and of a good upright habit.

The fruit is large— $3\frac{1}{2}$ inches in diameter, and 3 inches high, roundish and oblate, and angular on the sides. The skin is bright yellow, with a bright red blush on the side exposed to the sun. Eye open, with short erect segments inserted in a contracted and angular basin. Stalk very short, deeply inserted in a russetty cavity. Flesh tender, juicy, and with an agreeable acidity.

A first-rate early culinary Apple, ripe in the end of August.



Yorkshire Beauty.

GARDEN NOTES ON THE SEASON OF 1872 IN CENTRAL IRELAND.

Our season here (north centre of Ireland) this year has in many respects been the reverse of last year. Last year we had a very fine June and a very wet July; this year an extremely wet cold June and a fine July, a tolerable August, and a perfectly fearful September. There never was anything so irregular as the growth of plants. Everything at all hardy grew all through the season in the most rampant way—far too much so, while no delicate plant stirred a leaf till the beginning of July. Flowering Geraniums, Polemonium, Mangles's Geranium, and Lobelias grew out of all bounds. Iresines and Bicolor and Tricolor Geraniums grew less and less. Things then changed as far as these last were concerned, and I never recollect such a rapid growth in Bicolors as during the first fortnight of July.

I have not many changes of opinion to announce since this time last year. One is, that I now quite agree with Mr. Peach in giving up Tom Thumb Ageratum. It does not do in this wet climate at all. The flowers soil immediately, presenting a marked contrast in this respect to Imperial Dwarf, which stands bad weather remarkably well. No purplish-blue bedding plant that I have seen anywhere this year, is to be compared with Imperial Blue Pansy. I cannot understand why it is not more grown. A bed of it with me came into bloom in the end of March and remained in beauty till the middle of September, when the weather was so thoroughly diabolical that no

blossom of any kind had a chance. This Pansy stands rain extremely well, and was brilliant when Purple King Verbena was utterly washed out. While on the subject of Pansies I may say that I suspect in Sandbeck Gem, procured by me from Mr. Cannell, of Woolwich, we have a gem indeed. Its colour is a bright yellow. It was the first Pansy to blow with me, and it is still in fair bloom, having buried all its brethren. A bed of Imperial Blue, with a broad edging of this one, would, I think, be quite grand. These Pansies require care and watching: I never allowed a seed-pod to form, and gave them repeated drenches with liquid manure, and they well repaid the attention.

Crimson King Verbena would not grow or blow at all, and Basilisk, the new bedder sent out by Messrs. E. G. Henderson, is quite too rank a grower. I agree with Mr. Peach in thinking very highly of Little Gem and Indigo Blue Lobelias; the latter, when looked at from a distance, has much more blue and less slate colour in it than the old speciosa, no matter how good the strain of the latter may be.

Now as to Bicolors and Tricolors. Beauty of Calderdale and Her Majesty grew wonderfully, but they were very green, I shall discard them.

Crown Prince is beautiful, but is too delicate for out of doors here. I may say the same of Goldfinder, Countess of Kellie, Fairy Ring, and Mrs. Allan Lowndes. Luminator is too green, and so has Dragon been, but I have heard such a good account of this variety from other growers, that I shall try it another year. Auric, Waltham Bronze, Charming Champion, Prima Donna, and Sybil (I put them down in order of merit) have all been first-rate; fine decided colours, no mottling on the zone, and good, healthy, compact growers.

Prince of Wales is quite the best Tricolor here. It is a fine sturdy grower, with a splendid colour. It has to be watched carefully, as slugs are very fond of it. Mrs. Dunnett is not so good in any way. It is far more delicate, but forms a very pretty-shaped plant, which is more than can be said for Florence; this variety grows straggling, throwing out great arms and legs. It was variable with me in colour, sometimes very good and oftener dull enough. Lucy Grieve grew very well, but was not as bright in colour as usual. Sophia Dumaesque was as good as ever, which is saying a great deal; Lady Cullum not so good, too green and brown.

Among flowering Geraniums not one out of about twenty of the newest kinds could be put in comparison with Vesuvius; during our fine July it was splendid. It grew, however, much more rankly than it did last year. The next to it in order of merit was Charley Casbon, which is a little treasure. Its blossoms resisted our continual deluge better than any other kind (Mr. Peach will kindly explain this), and Violet Hill much the worst.

Lastly, I cannot praise Abutilon Thompsoni too highly. I think it possesses on the whole the most lovely variegated leaf that we have, and the plant can be very easily kept over the winter.

I hope very much that other correspondents living in bad climates will give us their experiences, that while living we may learn.—D. F. J. K.

ROYAL BERKS ROOT SHOW.—This is to be held at Reading on November 23rd. It has become one of the largest root shows

in the kingdom, and prizes to the value of £80 are offered for the best specimens of agricultural roots and Potatoes. Messrs. Sutton & Sons, Seedsmen, Reading, offer sixty-seven prizes,

the highest being for their Champion Swede and improved varieties of Mangold. They will send a list of the prizes to any who apply for them.

MARANTA SEEMANNI.

To all lovers of ornamental leafage this plant will be specially welcome, and it is undoubtedly one of the best introductions of my late friend, Dr. Berthold Seemann. It has been sent home as a *Maranta*, but it certainly has much the appearance of a dwarf-growing *Heliconia*, and if this surmise is correct, it may produce conspicuous and ornamental flower-

bracts in addition to the fine foliage. Be it, however, *Maranta* or *Heliconia*, the fact remains that it is very beautiful and thoroughly distinct; I certainly look upon it as amongst the best new plants of the present season. Mr. W. Bull, of Chelsea, to whose courtesy your readers are indebted for the accompanying illustration, is the fortunate holder of the stock of this



Maranta Seemannii.

plant, for which the demand will undoubtedly be great when once it becomes known.

The leaves are ovate-acuminate, some 12 inches long by about 6 inches in breadth; on the upper side they are of an intense deep satiny green having a light midrib, whilst the under side is of a deep vinous red, affording a pleasing contrast.

Maranta Seemannii is not, strictly speaking, a variegated plant, yet it possesses so much beauty that even amongst

Marantas, which are so numerous and so beautifully marked, it cannot but occupy a leading position. This plant thrives admirably under the same treatment as the other Marantas; it delights in strong heat and moisture, and should be potted in a compost consisting of good peat, a little loam, and sand. The drainage of the pots must be kept in good order, for although it likes an abundant supply of moisture, water must not be allowed to become sour around its roots. It is a native of Central America, about Nicaragua.—*EXPERTO CREDE.*

NOTES AND GLEANINGS.

THERE is now in bloom at Dangstein, in the collection of R. H. Nevill, Esq., a magnificent plant of *PERISTERIA ELATA*, or Holy Ghost Plant, upwards of 6 feet high.

— We have seen THE ORIENTAL PLANE growing by the margin of a lake where its roots must reach the water, and it

is in a state of the greatest luxuriance, and with an expansion of foliage rarely to be seen.

— How little attention is paid even in the present enlightened age to VENTILATION! how often do we find bedrooms without chimneys! In such I would never advise anyone

having regard to his health to sleep. The chimney supplies a means of ventilation for which even the window is but an imperfect and less safe substitute.—Y.

—A QUANTITY of IRISES, offered by Messrs. Butler and McCulloch, of Covent Garden, for planting in Finsbury and Southwark Parks, has been received by the Parks' and Commons' Committee, and a vote of thanks returned.

—ONE of the most remarkable relics in the neighbourhood of the city of Mexico was destroyed by fire early in the summer—the grand old CYPRESS hung with mosses, well known to travellers by the name of the *Arbol de la Noche Triste*, or Tree of the Sad Night, under which Cortes is said to have passed the night of July 1, 1520, after his defeat by the Aztec forces. It is unknown whether it was set on fire purposely or by accident. The tree was one of the largest of its kind. It stood by the wayside. A portion of the trunk was hewn away some years since, and sent to the Naval Museum at Madrid, where it is preserved with great care.

—It may interest some of our readers to know what the florists of the last century considered the properties of the CARNATION and PINK. In a manuscript now before us, dated 1756, we read, "But that you may be acquainted with what the florists call good properties I shall here set them down. 1, The stem of the flower should be strong and able to support the weight of the flower without lopping down. 2, The petals or leaves of the flowers should be long, broad, and stiff, and pretty easy to expand, or, as the florists term it, it should be free to flower. 3, The middle pod of the flower should not advance too high above the other part of the flower. 4, The colours should be bright and equally marked all over the flower. 5, The flower should be very full of leaves, so as to render it when blown very thick and high in the middle, and the outside perfectly round."

—In the garden of the Royal Horticultural Society at Chiswick a collection of MINIATURE CHRYSANTHEMUMS has been in bloom for many weeks past. They are a quite distinct race from the ordinary liliputian Chrysanthemums, and were collected by Mr. Spinks during his residence in France. They may be called summer-blooming, as they are now going off just as the autumn bloomers are coming in.

—A VARIETY of PLANE, of which I received from France a considerable quantity a few years ago under the name of *Platanus occidentalis*, has suffered very much by the frosts of a fortnight ago. The whole of the young shoots and leaves are cut, and look as miserable as the rows of Scarlet Runners not far distant from them. This, in a district of the Weald of Sussex, where the Sweet Bay, Laurustinus, and common Laurel are never cut down, goes far to confirm the opinion that *Platanus occidentalis* is a tree which cannot attain any great stature in this climate.—H.

—THE Commissioners of Her Majesty's Works and Public Buildings intend to make this autumn among the working classes and the poor inhabitants of London a DISTRIBUTION of the surplus BEDDING-OUT PLANTS in Battersea, Hyde, the Regent's, and Victoria Parks, and in the Royal Gardens, Kew. If the clergy, school committees, and others interested will make application to the Superintendents of the parks nearest to their respective parishes, or to the Director of the Royal Gardens, Kew, in the cases of persons residing in that neighbourhood, they will receive early intimation of the number of plants that can be allotted to each applicant, and of the time and manner of their distribution.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Asparagus stalks should be removed, and an adequate quantity of seed collected for the yearly sowing. A slight dressing of salt may be advantageously applied to the beds. The decline of the late crops of *Beans*, *Cauliflowers*, and *Peas* should be immediately followed by their removal, and no decaying or useless vegetable matter should be allowed to cumber the ground. If vacant ground is not directly required, it should be rough-dug or ridged for exposure. The distribution of manure should be governed by the character of the late and proposed crops; for instance, the *Onion* quarter has probably received a dressing sufficient to carry a crop of *Cabbage* without further assistance. Strong-growing *Peas* and *Beans* impoverish the land; quarters which have been thus occupied might be appropriated to early *Potatoes* in due season. In the future cultivation of the Potato all circumstances that tend to promote excessive luxuriance must be avoided; at least this season, the

general examples tend to prove this assumption. A good supply of the late sowings of *Lettuce* should be planted in situations best calculated to afford them protection in the winter; when the accommodation of pits or frames can be afforded, a quantity might be planted beneath them to ensure a regular supply independent of the weather. The out-of-door Cucumber-bed stirred over will be suitable for August-sown Cauliflowers, which will shortly require the protection of hand-glasses. Clear away decayed leaves from *Rhubarb*, and dress with a little good soil those plants intended for early forcing.

FRUIT GARDEN.

The principal routine here will consist in gathering and storing all the late varieties of Apples and Pears. The present is by far the best time for lifting and transplanting very vigorous and unfruitful trees on the walls. Apricots, Peaches, and Nectarines can be so treated with great advantage, and after the operation is completed they should be well mulched for the winter. Fill-up all vacancies on the walls with young trees; never let this be left until the spring if it can possibly be avoided. Where root-pruning is considered necessary, now is the time to see to it.

FLOWER GARDEN.

Proceed with potting such plants as it is desirable to keep, and a little heat should be applied to help them to root before winter. Steps should also be taken to fill-up the beds as they are cleared, for the purpose of contributing to the enjoyment of spring. A miscellaneous mixture of dwarf early-blooming shrubs, perennial plants, and bulbs is most commonly planted; but, as has often been stated, in regularly laid-out beds and in geometric gardens the disposition of colour should be carefully considered, as there is an abundance of spring-flowering plants and bulbs to form a rich and varied display if properly arranged and carried out. Lawns will now require daily sweeping in order that they may present anything like neatness. Roll constantly wherever the turf is hollow, to keep a firm sward. Well clean gravel walks for the winter, and afterwards let them be rolled in order that the water may pass freely off the surface. All operations connected with planting, relaying turf, and border-making should be actively proceeded with.

GREENHOUSE AND CONSERVATORY.

By this time most of the specimen plants will have been securely housed, and the houses and their occupants, if former directions have been properly attended to, will be as clean and neat as it is possible to make them. The conservatory will now become the principal feature of attraction for the winter, and to this house every plant which has a bloom upon it must be removed. The scarlet *Pelargoniums* prepared at the beginning of the summer will now be coming into bloom, and in a temperature of from 45° to 55° will continue in flower for months. *Salvias*, too, especially the old *S. coccinea* and some of the other kinds, with *Chrysanthemums*, *Perpetual Roses*, and a few choice subjects from the greenhouse and stove, will make the house look gay for a long time to come. Do not forget the Neapolitan and tree Violets, with *Mignonette*, *Cyclamens*, and such other plants as may evolve a little scent; and keep every part of the house as neat and clean as possible. Cleanliness and free ventilation, when the weather will admit of it, should receive constant attention. If unfavourable weather should occur, do not hesitate to use a little fire heat at times, especially if the houses contain a good many plants in bloom, for in that way a free ventilation may be indulged in to expel damp and stagnant air. By means of the *Perpetual Roses*, *Chrysanthemums*, and the other late-flowering plants, this structure may yet be kept gay for many weeks to come. Supply them occasionally with weak manure water in a clear state. Begin gradually to shorten the quantity of water in the greenhouse, and water the plants in the morning, so as to get the house dry during the day. Do not, however, suppose that growing plants require to be dried-off during the dormant season; what they want is sufficient to prevent their drooping, of course avoiding saturation. Give abundance of air both day and night when the weather is favourable, but endeavour to keep the greenhouse plants warmer than the Heaths. For the latter, to exclude frost is all that is necessary. The specimens on the walls and in the borders of the conservatory must be examined at the roots, and if necessary receive a gentle soaking of weak clear liquid manure. Look the *Camellias* over, and thin out the flower-buds where necessary, allowing not more than two buds to each shoot, and retaining the largest and smallest so as to get a long succession of flowers. The leaves, if necessary, must be washed clean, and the same of Orange trees; above all things keep a sharp look-out for insects. Those who have no more room for their plants than they know what to do with, will be glad to convert their vinery or other forcing houses into plant houses for a few months. For such houses strong portable stages should be provided, and in them such plants as *Chrysanthemums*, *Pelargoniums*, and thousands of plants for the flower garden may be housed until the return of the forcing season. If the wood of the Vines is pretty well ripened, the lateral shoots may be removed to admit light to the plants, and some of the longest of the spurs shortened likewise.

A great quantity of plants may be packed under the stages, and there scarlet Pelargoniums and Calceolarias from the flower garden establish themselves between this and the new year.

FORCING PLANTS.

All plants for this purpose must be got under cover, if possible, placing them either in cold pits or making some temporary provision for them. Roses may be pruned and regulated, likewise Lilacs and Rhododendrons. Azaleas and other American plants must be potted without delay. Plunge all the pots in old tan or some other light material, and that before the frost has destroyed the outer roots.

COLD PITS.

Cold pits will now be in request. Sawdust forms a good plunging material if new and dry; coal ashes are also very good. Whatever material is employed, keep the plants within a foot or so of the glass, and endeavour to have the soil in a somewhat dry state. Some of the hybrid scarlet Rhododendrons, as Noble-anum and others, require but little forcing, and are the best to start first. Put them in as small pots as their roots can be placed in without injury, and set them out of the reach of frost till wanted.

STOVE.

A few of the stove climbers may yet be in bloom. Remove dead flowers from them occasionally, and stop all straggling shoots. Let the atmosphere in the stove be moderately dry, in order that a lower night temperature may be permitted.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Cauliflower.—We trenched down a piece of Strawberries after putting at the bottom a dressing from the summer rubbish-heap. The Cauliflower plants do not require rich surface-manuring, nor even this, which will be eventually a good compost, until they become large and the heads begin to swell; then this storehouse of nutriment will tell much on the closeness and size of the heads. Rich surface-manuring would not be beneficial to young plants under hand-lights in winter. Although we put in plants of different sizes, we depend chiefly on small young plants, as they stand the winter better and are less liable to button or show their heads prematurely. Small moveable wooden boxes with a glass top would be more useful in every way. During the winter plenty of light will enter from the top, and the plants are kept warmer in cold weather in consequence of the sides being of wood.

Before placing the lights down the ground was rolled over, and then inside each light some light sandy soil mixed with a little sweet leaf mould was patted down so as to start the plants in it. Half an inch of rough drift sand placed over the surface soil in each light will serve to keep off slugs and snails. In each light, say averaging 22 inches square, we put nine of these little plants, and as they grow in spring we thin-out to four or five, those thinned-out forming a succession crop. On the whole we generally get the best and earliest returns from the make-shift lights, and especially when we protect the most forward a little in spring. We have had them even earlier by potting, placing little plants in small pots, changing to larger and larger as they grew, keeping them from severe frost, as in an orchard house, and turning them out strong plants with balls in fine prepared soil in the end of March.

Cauliflower plants, however, may be kept over the winter in an earth-pit or frame, where they can be protected from severe frosts and deluging showers, and, perhaps, there is no better protection than by light wooden shutters. In many places hundreds of young plants stand over the winter at the foot of a wall, but in all such cases if the roots penetrate into mellow rather hungry soil, the plants will be safer from having the above rough sand-surfacing kept rough.

Planted ridges with Lettuces and late Endive, and gave some earthing-up to Cauliflowers coming in on a bank, that the winds threatened to throw-up by the roots.

FRUIT GARDEN

We housed most of our Apples and Pears, examined fruit in the fruit-room, and kept a fire on during the day in the late vinery to prevent damping, and a little air is left on all night, unless the weather is very severe. We try to leave as few plants as possible in pots in a house where we wish the Grapes to hang a good deal longer. Our Peaches in the orchard house will soon be over. Plums will last a little longer. We should like to have a Plum house for late Plums. With a glass roof and means of using air for the Plums alone, we have no doubt that by these means the Golden Drop and others might be obtained in fine condition many weeks after they are dead ripe against a wall. Orchard-house trees in pots should not be allowed to become dry yet, as a want of moisture will often prevent the thorough swelling and ripening of the buds. In November, and from that time to February, little watering will be required.

ORNAMENTAL DEPARTMENT.

The heavy rains and slight frosts alternately may be expected to bleach the flowers, even if the plants should suffer but little. Though the flowers are seemingly fresh, we find since the frosty nights that they will stand only a short time in heated rooms when cut for vases, &c.; in fact, under any circumstances now, they stand but a short time after they are cut. When frost or heavy rains were anticipated we have several times cut some traysful the evening before they were wanted; but though the ends of the flower-stalks stood in a damp medium, they generally suffered less or more before the morning they were wanted. Treated in the same way before frosts came, however slight, the flowers would have remained fresh for several days in a cool shady place. Now, too, the water in glasses, &c., supplied with cut flowers becomes very soon extremely impure. It is hard to believe that the water in a vessel filled with cut flowers may be as pestiferous as if an open drain communicated with the room, but such might be the case. Charcoal and other things will lessen but not remove the evil.

Bulbs of all sorts may now be potted or planted; the modes have often been referred to. When grown in pots or glasses the bulbs should be kept dark until roots are freely formed and the bud of the plant is coming on. Any house could furnish a dark place for the purpose. Out of doors, darkness and comparative warmth are secured by covering the pots over with 4 inches or less of clean ashes. In potting, drainage is of importance, and is secured by placing the convex side of a fair-sized crock over the hole in the pot, with some smaller pieces over it, and then a little moss or chopped straw to keep the soil from getting too much amongst the drainage.

Drainage is one of those simple things which are apt to be carelessly and slovenly done, such as merely placing a single crock over the hole in the pot, and a little rough stuff over it, a plan which will do very well for plants that will need turning out again in a few weeks, but ruinous to all plants that have to remain the greater part of a season in the same pot. We have had an endless amount of work to go over again at times from this simple neglect, as the soil, however good at first, became waterlogged and sour. Even such plants as Chinese Primulas often go off, rot, and fade away at the collars, because there has been a deficiency in the drainage. A plant with huge heads in a 5 or 6-inch pot is no despicable object, but it will never be seen where the soil is sour and waterlogged. A little charcoal in bits, not dust, helps to keep the soil open, but after all, drainage, and not so much the quantity as how it is placed, is the chief thing. It is not well to inundate the stems of Primulas or other plants in watering, but rather to sail the water round without touching the stems or collars too much; but even that would be less injurious if the drainage were efficient. Many noble plants of Camellias, Azaleas, and other more costly subjects are ruined or rendered unhealthy owing to defective drainage.

When pots stand on any porous material, as sand, ashes, cocoanut fibre, &c., the hole at the bottom should be frequently examined, as such material will often work itself so firmly in the hole as to render the best drainage useless. Of course, such care would not be required if the pots stood on wood, stone, slate, &c., but the former has the advantage of retaining the moisture about the pots longer when that moisture has no attendant inconveniences. Getting every plant at all tender under some kind of protection is now a matter of importance, as all pots with plants in them are more easily injured in their roots than in their branches.

Lat Cuttings.—We are still taking off some that we value most of variegated Geraniums, as we can keep them in so much less room than plants, if we took them up. We cleared off some beds under frames of early Cucumbers, &c., because we thought we could do without them, and having planted them early in the year, we felt sure we could not give them enough of heat easily without making fresh and warm linings. We took out the soil and a little of the half-rotten dung and leaves, put in a foot or 15 inches of warm dung, covered over with what was taken out to keep down all steam, and covered with some inches of dry ashes. There we placed freshly-taken cuttings partly plunged, and the latest and most tender last taken, watering them before they were moved, and letting them drain before half-plunging them in the dry ashes. To prevent damping, the ashes should be dry. The chief safety-valve in this respect is tilting the sashes at back from a quarter to half an inch in depth at night, so that no vapours can accumulate there.—R. F.

TRADE CATALOGUES RECEIVED.

George Poulton, Fountain Nursery, Angel Road, Edmonton, London, N.—*Catalogue of Bulbs*.—*List of Plants and Cuttings*. Duncan & Son, Christchurch, New Zealand.—*General Descriptive Catalogue of Garden, Farm, and Flower Seeds, &c.* Barr & Sugden, 12, King Street, Covent Garden, London, W.C.—*Autumnal Descriptive Catalogue of Bulbs, &c.* Little & Ballantyne, Carlisle.—*Catalogue of Trees, Shrubs, Fruit Trees, &c.*

Elcome Brothers, 7, Esplanade, Ealing.—*Catalogue of Flower Roots, Dried Natural Flowers, &c.*
W. Knight, Hailsham.—*General Catalogue.*

TO CORRESPONDENTS.

N.B.—Many questions must remain unanswered until next week.

ORANGE BLOSSOMS (*C. Lee*).—Your question was answered at the time. See page 440, vol. xxii.

A GREEN GRAPE (*Green Grape*).—In your greenhouse, unheated after March, you may cultivate the Buckland Sweetwater.

GARDEN PLAN (*E. Shuter*).—It may be of any size you please, provided you are careful to have each bed in proportions similar to those of the plan. There is no work such as you mention, but there are eleven communications and drawings giving full directions in our nineteenth volume.

FRUITS FOR SURREY ORCHARD (*W.*).—We cannot advise, as we do not know the size of the ground to be planted.

GAS LIME (*H. C.*).—We have applied it at all seasons to destroy grubs and slugs. We sprinkle enough to whiten the surface. You will see our reply on the subject to another correspondent last week.

VINE LEAVES SCORCHED (*An Old Subscriber*).—The sun has "taken hold" of the vine leaves; it may be caused by bad places in the glass, or by insufficient ventilation.

LATE-KEEPING GRAPES (*Amateur*).—Lady Downe's and Alicante are the best late-keeping black Grapes. The former is liable to scald, but this can be prevented by giving plenty of ventilation just before the Grapes begin to colour. Calabrian Raisin and White Tokay are both good late-keeping white Grapes. We cannot recommend the other white variety you name. West's St. Peter's is a good late Grape. You might try a Vine of Gros Colman; it is a noble-looking variety.

PRUNING FIG TREES (*H.*).—The best time to prune your Fig trees will be March, when you must cut away some of the old wood, and nail-in the young fruitful shoots, but do not shorten them. If a portion of the wood had been cut away in August, the young shoots would not now have been so crowded, and would have ripened better. We approve of summer pruning and training for all sorts of fruit trees. Bear in mind that the Fig bears only on the young wood, and if this is cut away the crop will be lost.

RED SPIDER ON PEACH TREES (*F. G. Sykes*).—Do not remove the leaves from the trees before they fall naturally. You may assist nature by drawing your hand or a broom gently up the shoots, not downwards, as you would then injure the buds. Brush up, and remove the leaves as they fall off. If you allow the red spider to establish itself too firmly, it is then difficult to dislodge. Wash the trees well with clear water on the first appearance of the pest; this should be applied every morning with a garden engine. You will not require any nostrums if this be done effectually. We never winter-dress the trees in any way, but we never allow red spider to get a hold of them in summer.

BRICK-LINED STOVE (*W. B. Alford*).—In our No. 354, page 28, is a drawing of one. You could fit in the bricks yourself if you purchased the iron stove.

PROPAGATING CENTAUREA CANDIDISSIMA (*H. F. H.*).—It is best propagated in March by cuttings. Old plants may be taken up now, potted, and wintered in a house safe from frost, giving them no more water than is sufficient to keep them fresh, and removing the old leaves as they die off. If such plants are introduced into a heat of 50° or 55° in February, they will soon produce a number of cuttings, which should be taken or rather slipped off, the heel pared smooth, and the leaves removed as far as they are to be inserted in the soil—namely 1 to 1½ inch, and if the cuttings have the same length of stem they are long enough. Insert them singly in 3-inch pots, using very sandy soil, with a little sand round the base. Place them in a gentle bottom heat of 70° to 75°. Keep them shaded and moist, but not very wet, and they will soon root. The cuttings do not strike so readily at other seasons, though they will do so if similar means be adopted.

TRICOLOR PELARGONIUMS (*Idem*).—Winter them in a temperature of 45° from fire heat, and in spring 50° will be quite sufficient. After May they are best in cold pits. They can hardly be kept too near the glass, and should never be watered until the soil is dry. Liquid manure may be applied at every alternate watering after March, but only when the pots are full of roots. One pound of guano and a peck of soot to thirty gallons of water make a good liquid manure; stir well up before use.

ROOF FOR ICE HOUSE (*A. B. C.*).—As the rats have made holes in your thatch roof, thatch it with heath instead of straw. It is, perhaps, equal to straw. Could you not poison them? We do not think roofing felt would serve you, but it might do so if placed under and over the thatch, and coated with gas tar, which rats avoid; it would also assist in preserving the ice. It should be so put on that the rats cannot enter the thatch without eating through it.

ROSES IN POTS (*J. W. L.*).—We should at once turn the Roses out of the pots, remove all the soil that comes away freely from the roots, and pot in fresh soil. Eight or 9-inch pots for the size of the plants you describe will answer very well. After potting they should be placed in a cold pit, or be plunged over the rim in coal ashes in a sheltered position, affording protection in severe weather. Pruning may be done in November, or be deferred until the plants are introduced to the house, which, for flowering in April, should be in January. The pyramidal form we consider the best for pot Roses.

PRUNING MARSHAL NIEL ROSE ON WALL (*Idem*).—The Rose tree having become bare at the bottom of the wall, we should advise you to cut out the old shoots to within a few inches of their base, leaving sufficient young shoots for covering the wall, and as they have all formed at the top of the wall we should bring them down, taking care not to break them in turning. The shoots cut down will most likely each give you one or more shoots, and that being the case you will have little difficulty in covering the lower part of the wall. We should nail-in what we could of the foreright shoots, only removing the unripe points of these and the long shoots. The very weak wood is of no use, and may be cut clean out.

PEACH TREES ON A SOUTH WALL (*Idem*).—The subsoil being a cold, wet, and heavy "brick clay," we approve of your paving the bottom, and we should run it afterwards with thin mortar, which we should allow to dry or set before pitting in the compost that you name. Fibrous loam and a little old manure

will answer well. Holes 4 feet wide are not so large as we should wish, but we presume you will enlarge them as the trees grow, and the old trees can be reduced to make way for the young ones.

PEAR LEAVES BLACK IN ORCHARD HOUSE (*A. A.*).—The Pear tree leaves from the orchard house seem as if the sun had shone powerfully on them and browned them, most likely when wet or under some spots in the glass. This season, however, if the buds are all right we should think nothing of the browning of the leaves. We have had a few leaves on Apple and Pear trees out of doors that were similarly marked in summer, after the hail and sleet late in spring. There has not been the usual health in the leaves of fruit trees generally this year, but the buds for next year seem to be in good condition.

USES OF A FORCING PIT (*Excelsior*).—As it is, your pit cannot profitably be used for both Cucumbers and Melons, as the two do not succeed well together. You could have a division put in, and then use one half of the pit for Cucumbers and the other for Melons. We presume you have not yet sown the seed of the Cucumber. For a winter supply it should have been sown the first week in September; but you may still sow the seed, and the plants will fruit very early in the new year, or you may defer sowing until January, and the plants will fruit in April. In this latter case your pit will be available for forcing up to January; and if you have a small frame made for raising the plants, Rhubarb, Sea-kale, and Asparagus may be forced in the pit, and in January you may sow in pots. You may sow Dwarf Kidney Beans, which will come in at the close of February or early in March, and without injury to the Cucumbers. The other division you can employ for a similar purpose until it is required for the Melons, but after they and the Cucumbers are planted you ought not to grow any subjects that will interfere with the main object to which the house is applied. There is no work separately on forcing, but it is treated of in "In-door Gardening," which may be had post free from our office for 1s. 7½d. You will also see what is to be done in Work for the Week and Doings of the Last Week. A saccharometer, as described by Mr. Fenn, may be had of any philosophical instrument maker.

NEPETA SALVIFLORA (*Kittie*).—It is a pretty purple free-flowering plant, but of its value as a bedding plant we have no experience. *N. tenebrifolia* is a good subject for the purpose. Plant out the *N. salviflora*; when you see its growth and bloom next year you will be able to judge of its suitability for your purpose. It is hardy, and requires a light and well-drained soil. *Sempervivum californicum* is quite hardy except in a wet heavy soil. We do not know of a Sedum that would suit your requirements.

CEREUS McDONALDI NOT FLOWERING (*W. F. H. S.*).—We think you keep the plant much too moist, and that it has not sufficient light, as the roof of your house is covered with climbers. If the cause is not too much shade, it may be the shoots being trained against the wall instead of on an iron trellis, the wall being probably damp, and therefore inducing constant growth, and it is likewise not unlikely that the plant is too moist at the root. From the present time up to March we should keep it without water at the root, and we should say it will flower next year. We do not know what more you can do, unless you plant it out in a border 18 inches or so wide and 2 feet deep, draining well, and forming the border of a compost of one-half fibrous loam, one-fourth old lime rubbish, and one-fourth broken bricks and charcoal, the whole well mixed. The main points, however, are to keep the plant dry from October to March, and to secure a good growth in summer.

CAMELLIA BORDER (*A Lady Subscriber*).—Apprehending injury to the border from the roots of adjoining Elm trees, we advise you to have the sides of the border walled round and the bottom concreted. For this you will need the border to be 2 feet 6 inches deep, and we should place 3 inches of broken bricks, stones, or gravel at the bottom, ram this material hard, and then put on 2 inches of the same materials but smaller, inclining from the centre to the sides of the bed, so that the water may run in that direction. A very slight fall is sufficient, one inch in a yard will do. The rubble should then be cemented with equal parts of Portland cement and very fine gravel brought to the consistency of mortar with water; put it on half to three-quarters of an inch thick, and give a smooth surface with a trowel. You may employ lime instead of cement, using with it two parts sharp sand, forming it into thin mortar, and running it on to the stones or broken bricks at the bottom so as to be quite level with their surface, and allow it to remain until hard then add about half an inch more, and smooth all over with a trowel. The cemented bottom is vastly superior to the lime: we advise the former. You will need a drain to carry off the water, therefore have a hole left in the wall and introduce a drain-pipe; socket-pipes are best, and with the joints cemented there will be no fear of the Elm roots getting into the drain and choking it up. We should have a drain laid all round the bed joined to the drain outside the bed. Make them of common drain tiles. At the bottom of the bed place 6 inches of rubble, rough at the bottom and finer at top. The rubble should be laid on and around the drain tiles. You have now a foundation and 18 inches left for soil. The best soil you can have is the top of a pasture where the soil is a light sandy loam taken off with its turf, and we should cover the bottom all over with the turf grass side downwards. This will keep the drainage free. Of this soil use three parts chopped up in pieces about 2 inches square, and one part sandy fibrous peat. A half part each of old cow dung and sharp sand may be added advantageously, also charcoal; the whole should be well mixed and put in firm, therefore the material should be rather dry when used. Make the bed fully 6 inches higher than the intended level, for, however well made, the compost will settle. Plant out next spring immediately after the flowering, and do not shake the soil off the roots, but loosen the sides of the ball and plant with it entire, taking care to keep the neck or collar of the plant rather high.

PRIMULA SINENSIS FIMBRIATA (*W. S.*).—We should allow the fine plants to flower, as they are more valuable during the dull autumn and winter months than in spring. As you particularly wish the plants to flower in spring, you may now pinch out the trusses of bloom, and the plants will continue growing; if all trusses of bloom be cut off up to Christmas they will flower in spring. We would only cut out the trusses of the weakest plants up to the middle of January, and they will succeed the flowering stock, continuing the blooming period till early summer. It is not legal to manufacture English-grown tobacco for personal use.

GYMNOGRAMMA CHRYSOPHYLLA CULTURE (*P. A.*).—The botanical name of the Golden-leaved Fern is that given above. It is a stove Fern, requiring a temperature in winter of 55° to 60° at night, and 65° to 70° by day. Grow it in a compost of two parts sandy peat, and one part fibrous light loam, with a sixth part each of silver sand and sandstone in pieces between the size of peas and hazel nuts, the whole well mixed. Drain the pot well, but do not report until early in March. Keep the plant rather dry during winter, but not so much so as to cause the fronds to flag. Cut off the withered fronds. Do

not syringe overhead, but sprinkle the stage and other surfaces with water once or twice a-day. Of syringing overhead it is very impatient, but during the growing season it cannot have too moist an atmosphere; do not wet the plant overhead, but water it freely. Slight shade from bright sun from March to October is necessary; keep the plants about a foot from the glass, and admit air moderately.

CLIMBER FOR FERNERY (*Quisquis*).—You do not say what the temperature of the fernery is. It may be that of a stove. A fast-growing climber for it is *Passiflora calycina*, with blue and purplish red flowers. The growth is very rapid, and the foliage dense. *P. Decaisneana* has magnificent leaves, and the largest flower of all the *Passifloras*. It is of rapid growth. For a greenhouse fernery, *Tacsonia Van-Volxemi*, *T. mollissima*, and *Passiflora Commess Nesselrode* are all free-growing—in fact, of very rapid growth; the first and third have very ornamental flowers. Plant out in a border of two parts fibrous loam, one part each sandy peat and leaf soil, with a free admixture of sharp sand. The border should be well drained.

NAMES OF INSECTS (*J. R.*).—The black objects on your gnawed Pear leaves are the cast and dried skins of the slimy larva of the little black-winged Sawfly, *Selandria aethiops*. (*A Subscriber*).—The little red insects which cover some of the bunches of your Grapes are the small species of mite so injurious in hothouses, generally misnamed the red spider.—*I. O. W.*

NAMES OF FUNGI (*Downie*).—1, *Lactarius quietus*; it smells, as Berkeley says, like bugs, and we cannot recommend it for the table. Under trees. 2, *Agaricus fascicularis*, poisonous—smell it. On old stumps. 3, *Agaricus granulosus*, pretty and common. We do not know its qualities. Mossy pastures. 4, *Hygrophorus virgineus*, edible. Pastures. 5, *Agaricus phalloides*, poisonous—smell it. Under trees. We request that all correspondents who send fungi for naming will keep numbered duplicates for reference, or our time and trouble are thrown away.—*W. G. S.*

NAMES OF FRUITS (*Centurion*).—*Pears*.—1, Chaumontel; 2, Prévoist; 3, Beurré d'Aremberg; 5, Bonne d'Ézé. *Apples*.—Reinette Royale and Pit-maston Nonpareil are correct; that from an old tree is Ravelstone Pippin. (*M. T. Smith*).—1, Passe Colmar; 2, Beurré d'Aremberg; 3, Ne Plus Meuris. (*J. K. Y.*).—1, a local variety, worthless; 2, Scarlet Leadington; 3, Unknown. (*P. D. M.*).—1, Kerry Pippin; 2, Braddick's Nonpareil; 3, Beauty of Kent; 4, Flemish Beauty; 5, Beurré d'Amanlis; 6, Louise Bonne of Jersey. (*S. H. H.*).—Longville's Kernel. (*A. Atkinson*).—1, Bedfordshire Foundling; 2, Carlisle Codlin; 3, Cellini; 4, Calville rouge d'Été; 5, Christie's Pippin; 7, Early Julien; 8, Striped Beefing. (*W. Müller*).—1, Mère de Menage; 2, Ribston Pippin; 3, Belle de Noël; 4, Not known, evidently worthless. (*S. P.*).—1, Beurré Diel; 2, Beurré d'Aremberg; 3, Louise Bonne of Jersey; 5, Beurré de Capiaumont; 6, Brown Beurré.

NAMES OF PLANTS (*A. B.*).—No. 1 is *Cupressus torulosa*; No. 2, *Pinus sylvestris uncinata*. (*Lady Byng*).—*Acer platanoides*, the Plane-like or Norway Maple. (*G. R. G.*).—Your Fern is *Cyrtomium falcatum*. Not rare. (*J. H. Ley*). 1, *Asplenium angustifolium*; 2, *Aspidium acrostichoides*. (*A Subscriber*).—1, *Pellaea hastata*; 2, *Asplenium marinum*. (*M. E.*).—1, *Asplenium faecidium*; 2, *Onychium japonicum*; 3, *Athyrium filix-femina*; 4, *Davallia novae-zelandiae*; 5, *Monostroma of Lastrea Filix-mas*; 6, Indeterminable; 7, *Pteris arguta*. (*George Strickland*).—*Asplenium Trichomanes*, and a seedling of some *Lastrea*. (*P. D. G.*).—Indeterminable.

POULTRY, BEE, AND PIGEON CHRONICLE.

THE CRYSTAL PALACE POULTRY SHOW— SELLING CLASSES.

SOME of the readers of "our Journal" may remember a few remarks I made in the issue of January 4th this year regarding the immense selling classes at the Crystal Palace Show then just over. I strongly advocated the division of the classes into large, medium size, and Bantams; I also urged that there was great room for an extension of classes in which purchasers might obtain good birds at moderate prices, but not confined to the ridiculous figure of 40s. I suggested, in fact, an entire show composed solely of such classes, in which the price should be limited to five or six guineas. Among the objects I named which would be thus secured were—1, That such classes would attract really good birds, which could be secured by amateurs at a moderate and fair price; 2, That owners would have a good chance of clearing off much stock without such a great sacrifice as ordinary selling-class prices involve; and lastly, That such classes, without the evils of handicapping, would provide a fair field in which beginners or inexperienced amateurs who had fairly good birds might make a good fight without the certainty of being outdistanced by the champion birds of the year. Both of my propositions, I am glad to see, are to a great extent adopted in the present Crystal Palace schedule.

The ordinary selling classes (price not to exceed £2) are now divided almost exactly as I suggested. There is a class for cocks, one for hens, and one for cock and hen, devoted to the large varieties of Dorkings, Brahmas, and Cochins, three similar classes for the other varieties except Bantams, and a class for cock and hen for Bantams only. In addition to this there is for Dorkings, Cochins, and Brahmas a selling class a-piece, in which a cock and hen are to be shown, the price not to exceed five guineas. Why such breeds as Game and Spanish have not the same privilege does not seem quite clear, but perhaps as an experiment it may be wise to try it gradually.

Regarding the general classifications this year there will be more difference of opinion. I allude chiefly to the change of all the hen classes to single birds. I confess that for myself I do not like it. The change initiated by Birmingham of showing cocks and pairs of hens separately was unquestionably a step in the right direction, but a single hen is a different matter. It

will check sales, as a single bird is not of the same use for exhibition as a pair, while a single bird is far from the same evidence as to skill in breeding which is afforded by the exhibition of a nicely matched pair. Many can show one bird who could not show two; but many people, also, will not like even the necessity for separating favourite pairs of birds which have always been together and are used to the same pen, and altogether I rather doubt if this innovation is much liked. Carriage will be saved, no doubt, but the show will to the fancier be far less interesting than usual as regards the hen and pullet classes.

The addition of a fourth prize in some cases is a step in the right direction, but such prizes are allotted in a very capricious manner: thus, Black-red Game Bantam cocks have a fourth prize, but Black-red Game have not.—*L. WRIGHT*.

BREEDING LIGHT BRAHMAS.

THE best specimens at the different shows induce me to think that the breeders of this noble bird are committing great mistakes in breeding too much from what is called fashionable strains. I find a loss in weight, size, and colour, poor legs, and very light hackles. They ought to throw a dash of strange blood in from a pure bird with much darker feathers and stouter make. If this first crossing be not sufficiently effective, and if the markings or the size and health of the produce required more improvement, another cross similar to the first must be again resorted to, and again brought back to the original type.

I have no confidence in the permanence of a cross in the light-marked breed. I mean to assert, however, that by rational selection of larger and darker marked cocks with light hens, and by chance in breeding from the birds which show the best qualities and present the greatest likeness to one another, one could in course of time establish a strain reproducing itself with something like fixity. Thus having created what we call the breed, and though their acquired properties have in course of time gained something like fixity, yet there is always a tendency for them to lose in strength and dwindle away. It is this tendency which it is the task of breeders to counterbalance and to correct.

Inexperienced persons are apt very often to overlook the general qualifications of a bird in their ardour for cultivating a single quality or developing a single point of form; but one must always have in mind that it is a common law of Nature that the superior and extraordinary development of some particular part of an organism cannot be obtained except at the expense of the rest, thus committing great errors which it takes years to eradicate. It must also be borne in mind that it has been asserted by physiologists that the young partake more of the male's external form and of the female's internal organs.—*W. J. FORD, Humberstone, Leicestershire*.

CUPS FOR THE GREATEST NUMBER OF POINTS AT PIGEON SHOWS.

I OBSERVE in your paper of last week a paragraph announcing the date and referring to the schedule of Devises Show. I notice there is a silver cup offered to the exhibitor gaining the greatest number of points in Pigeons. Now, is this offered in order to increase the number of entries, or to bring together the best birds? If for the latter, that object will be attained; but if for the former, then I think the Committee will be disappointed—for we find of late, wherever a cup is offered to the exhibitor gaining the greatest number of points, that three-fourths of the entries are made by one or two professional dealers. Take, for instance, the late Worcester Show. Two cups were offered to the exhibitor gaining the greatest number of points in Pigeons; and good as the schedule was, we find out of the first seven classes there are forty-three entries, out of which twenty-seven are entered by two professional dealers, and the remaining sixteen by eight amateurs.

At Colchester Show, held in the beginning of this year, there was a cup given to the exhibitor gaining the greatest number of points in the Pigeon classes, and what do we find is the result? I will repeat the words of the *Field*—"We cannot understand why committees will offer these cups. They always lead to borrowing and dishonest exhibiting, and lessen greatly the total number of entries, as exhibitors and breeders of one or two varieties will not show when they are aware that, to win the points, cup birds will be borrowed from every possible quarter by the competitors. This was the case in this competition, where the winning stock of a well-known dealer who was not nominally an exhibitor made its appearance in the pens of one of the competitors." This is certainly sufficient evidence to show that if committees of Pigeon shows intend to have a good show they must either give at least four silver cups or none at all.—*SALISBURY*.

NORFOLK AND EAST OF ENGLAND POULTRY SHOW.—This is to be held in the Corn Hall, Norwich, December 11th and 12th

The Judges are to be E. Hewitt, Esq., and J. Douglas, Esq. Forty-two silver cups are offered in addition to the two and one-guinea prizes. We welcome the following announcement in the schedule:—"In consequence of the large number of birds claimed at the Show last season, and a general wish having been expressed to introduce all selling classes, no prohibitory prices for poultry at this Exhibition will be permitted; but while the prices allowed are quite sufficient to bring first-class birds into competition, as will be seen from the particulars following, amateurs will be able to purchase any bird at a fair price; at the same time birds of extraordinary merit will be to some extent protected, all prize and commended birds being offered for sale by auction, biddings commencing at catalogue quotations, and the excess realised will be equally divided between exhibitor and exhibition funds."

CROYDON POULTRY SHOW.

THIS Show was held on the 2nd and 3rd inst., in the Central Railway Station. Most of the arrangements were carried out successfully by an energetic Committee of fanciers, who issued a liberal prize list, which produced an entry of nearly 1100 pens, the largest number collected together for a long time so near to London, except at the Crystal Palace Show. The poultry classes were for young birds, and in some of these there were as many as thirty-four entries. We thought the Judge might have been instructed to award a third prize where the entries were so numerous. We must also protest very strongly against the purchase of prize birds before the Show is opened; these should be sold by auction, so that all may have a chance of purchasing a winner, and thus any cause for dissatisfaction to would-be purchasers would be removed. We reached the Show a few minutes after twelve o'clock, the time announced for the opening, but we noticed "sold" cards on several of the winning birds.

Coloured *Dorkings* were a good class, especially the pullets, the latter winning the cup, and they soon found a purchaser. In the class for Any other colour, Whites were first. Buff *Cochins* were a nice lot. The first-prize birds were rich in colour, but inclined to be scurvy on the legs; the second were slightly streaky in the hackle. The gems of the *Cochin* classes were the Partridge pullets, and these won the cup; their markings, shape, and size were such as have been rarely seen before. Light *Brahma* cockerels were a capital class, especially the winning bird, which had every appearance, with age, of making a grand bird. The catalogue price for him was only three guineas, and of course he was very quickly claimed for that sum, was resold for seven, and again sold for ten guineas. The pullets were the most numerous class in the Show, also one of the best. The first-prize Dark cockerel was good, but rather vulture-hocked and full in the tail; the second also good; if, however, he had a better comb, it would very much improve his head and appearance. The winning pair of pullets were grand in size and style; one was a little vulture-hocked, but they rightly deserved the cup for the best pen of *Brahmas*. *Spanish* were the best seen this season, the cup cockerel rather coarse in the face, but shown in good condition. The second will in time make a better bird. We noticed one cock entered as six months old, which must have, as we heard a fancier remark, "eaten one Christmas dinner," and on looking at his spurs we thought so too. The first-prize pullets were a splendid pair, and claimed for ten guineas. *Hamburghs* were numerous for a Show in the south, but, with a few exceptions, the quality was inferior. *Game* were good; many of the cockerels had hardly recovered from being dubbed. Browns were first and second. The cup went to a neat pair of Black Reds. The class for any other variety was poor. There were only two classes for *French*, one for each sex. *Crève-Cœurs* were first for cockerels, and took the cup, and second for pullets. *Game Bantams* were a capital lot, the pullets being better than the cockerels. In the Selling classes very few birds of any value were to be found.

The *Pigeon* prizes were in most classes very closely contested. Amongst the Homing Antwerps were some very fine specimens, with intelligent heads, and looking fit to find their way from any distance, and as they were all started for their different homes on the first day of the Show their liberation created considerable excitement. Only those marked as "prize-winners" and returned again to the Show would be entitled to the prizes.

At the request of the Committee I send a few remarks respecting the *Pigeons* at this Show of over four hundred pens, where excellence of quality was the rule and not the exception. Though the judge is not yet born who can please all, Mr. Esquilant, I think, pleased himself, and I hope he always will; yet I could not help differing from him materially as to some of his awards, but in most we agreed.

Of the Pouters I will merely say that there were many good birds, but owing to the time of year none were in show, and in a measure, therefore, they were shorn of their grandest pro-

perty. The birds of this year's breeding were the strongest class, and Mrs. Ladd won with a clean and good White.

Carriers, as was expected, were strongly represented, and, if I mistake not, amongst the adult Black or Dun cocks (Mr. Wiltshire winning easily) were many that have seldom been beaten. In the hen class of the same variety Mr. Wiltshire won the first and second prizes still more easily with a grand couple of Blacks, which he purchased last year for £25 10s., and for either of which, I am told on good authority, that £25 was declined—an evidence that good Pigeons are still in the ascendant as regards price. In Carrier cocks and hens of any other colour there was nothing special, except in the young class, which brought out a grand young cock of Mr. Fulton's and a hen of Mr. Ord's. The class for cock or hen Carriers bred in 1872 was the gem of the Show as regards quantity and quality, for it contained twenty-six pens of the most choice specimens I ever remember to have seen, and here it was that public opinion (no mean judge) was in favour of a Dun cock, shown by Mr. Wiltshire, that was only commended, having first honours, and which I thought a wonder. The winners belonged to Mr. Massey, and with the exception named it seemed to me a toss-up which of the other fourteen noticed by the Judge was entitled to second honours, so close was the competition; in my opinion most of them will be heard of again.

In Almonds and other varieties of Short-faced Tumblers there were some excellent specimens, and I was pleased to see Messrs. Blenkinsop, of Newcastle-on-Tyne, with seven pens competing most successfully against Messrs. Ford and Fulton with twenty-seven pens.

In adult Barb cocks Mr. Fulton won, but with about his ugliest representative; his hen in the next class was good. Though he took all the prizes, it struck me that his birds were sadly out of condition from want of rest. In the young Barb class Miss Hedley was easily first and second (in a good class of fourteen pens) with two very promising Blacks, though in some of the catalogues, through a printer's error, Mr. Heritage is wrongly decorated with first honours.

Of Jacobins there was a good show, and the names of those in the prize list are a guarantee of the quality.

Turbits brought out, I should say, Messrs. Nalder & Roper's choicest stud; they won the cup with a lovely Yellow. The same colour won for Mr. Betty the cup in Dragons, and I agreed with the Judge that the class for Dragons had never been surpassed. Mr. Fulton's well-known Trumpeters won first and second, though sadly in the moult; he was also first in the weak class of foreign Owls, Mr. Jones and Mr. Mangnall winning first and second with good English Owls. Fantails were also good, though in too small pens. In Magpies Mr. Corker won with his worst pen. In the Any other variety class another local celebrity deservedly won first with Black Swallows.

The Homing Antwerps were as usual a strong class, and two of their oldest supporters, Messrs. Sparrow and Tegetmeier, were first and second.

Where one has so many to thank for their attention it is almost a pity to individualise; but really Messrs. Nalder, Edridge, Wiltshire, and Roper's attention and desire to make both birds and visitors pleased I shall not soon forget. Mr. Teebay told me the poultry was by far the best lot of chickens he had judged this year. Mr. Esquilant judged the Pigeons with the exception of the Homing birds, in which class Mr. Sutherland kindly officiated. Mr. Rule's birds, through the railway company's neglect, were all too late, but the Committee had them judged, and those worthy were given extra prizes—another evidence of their liberality.—H.

DORKINGS.—Grey or Silver-Grey.—Cockerel.—1, J. C. Brown, Putney Heath. 2, H. S. Fraser, Headley, Liphook. *hc*, J. Chisman, Southampton; J. Clift, Dorking; J. D. Simmons, Wrotham Hill (?). Pullet.—1 and Cup, R. W. Beachy, Kingskerswell. 2, J. Smith, Clapham Junction. *hc*, J. Clift (?). 3, O. E. Cresswell, Early Wood, Bagshot; H. Pickles, Earby; J. D. Simmons. *c*, F. Farlett, Great Baddow.

DORKINGS.—Any other Colour.—Cockerel.—1, O. E. Cresswell. 2, J. Watts, Kings's Heath. *hc*, H. Pickles. Pullet.—1, H. Pickles. 2, O. E. Cresswell.

COCHINS.—Cinnamon and Buff.—Cockerel.—1, W. A. Taylor, Manchester. 2, G. Speedy, Whitby. *hc*, Capt. Coleridge, Wargrave; W. A. Taylor. Pullet.—1, Countess of Ellesmere. 2, W. A. Taylor. *hc*, Capt. Coleridge. 4, Dorby, Bridgenorth; E. R. Gray, Eastleigh; C. Sidgwick, Keighley; Countess of Ellesmere. *c*, Piper, Oxford.

COCHINS.—Any other Colour.—Cockerel.—1, E. Tudman. 2, W. A. Taylor. *hc*, R. W. Beachy; J. K. Fowler, Aylesbury; C. Sidgwick. Pullet.—1 and Cup, E. Tudman. 2, W. A. Taylor. *hc*, C. Sidgwick; R. S. S. Woodgate, Tunbridge Wells. *c*, Capt. Coleridge.

BRAHMAS.—Light.—Cockerel.—1, Miss Ward, Weyheas, Guildford. 2, Rev. J. D. Hoystead, Bradenstoke, Chippenham. *hc*, N. Heath, Totnes; J. M. Dunstable; J. Long, Forest Hill; H. Maynard, Holwood, Ryde; T. A. Dean, Marston. Pullet.—1, H. Chawner, jun., Uttroter. 2, R. Chisman, Southampton. *hc*, H. Benton, Erdington; H. Maynard; Mrs. Popham, Christchurch; H. Turner, Tiverton (?); T. A. Dean. *c*, T. A. Dean.

BRAHMAS.—Dark.—Cockerel.—1, H. Lingwood, Creeping. 2, T. F. Ardsell, Cowley Mount, St. Helens. *hc*, F. Bennett, Shifnal; W. Outlack, jun., Littleport; Hon. Mrs. A. B. Hamilton, Woburn; J. Hill, Brentwood; Rev. J. G. Knight, Chelmsford; H. Lingwood; W. A. Taylor. *c*, F. Harris, Ramsgate; Miss Ward, Guildford. Pullet.—1 and Cup, H. Lingwood. 2, T. F. Ardsell. *hc*, J. Alberry, Reigate; Rev. J. Bowen, Talgarth; R. Caborn, Biggleswade; E. Pritchard, Wolverhampton; Rev. J. Richardson; Mrs. Woodcock, Rearsby; W. A. Taylor. *c*, Rev. J. G. Knight.

SPANISH.—Cockerel.—Cup, 1 and 2, J. C. Brown. *hc*, E. Jackson, Wolverhampton; E. W. Stratford, Maidstone; J. Walker, Wolverhampton. *c*, J. Francis, Tonbridge. Pullet.—1, Nichols Bros., Camberwell. 2, E. Jackson. *hc*, F. Waller, Wood Green, London.

HAMBURGERS.—Gold or Silver-spangled.—Cockerel.—1, Ashton & Booth, Mottram 2, Duke of Sutherland, Trentham. *hc*, W. K. Tickner, Ipswich; G. & J. Duckworth; Duke of Sutherland. Pullet.—1 and Cup, Duke of Sutherland. 2, Ashton & Booth. *hc*, H. Beldon, Bingley; M. M. Cashmere, Sheepshed; H. Pickles; W. K. Tickner.

HAMBURGERS.—Gold or Silver-pencilled.—Cockerel.—1, H. Beldon. 2, H. Pickles. *hc*, Capt. Coleridge. Pullets.—1, W. K. Tickner. 2, H. Beldon. *hc*, H. Beldon; Capt. Coleridge.

GAME.—Black or Brown Reds.—Cockerel.—1, Mason & Winwood. 2, S. Matthew, Stowmarket. *hc*, C. F. Burnett, Biggleswade; G. Dingley, Colleshill; H. E. Martin. Pullet.—1 and Cup, Miss J. A. Akroyd, Eccleshill. 2, T. Dyson, Halifax. *hc*, J. Cook, Worcester; J. Jeken, Eltham; B. Mollet, Balham; W. E. Oakley, Abchurch; S. Matthew; H. Peters, Woolham; W. J. Fope; Mason & Winwood, Worcester.

GAME.—Any other Variety.—Cockerel.—1, S. Matthew. 2, J. Mason, Worcester. Pullet.—1, Miss J. A. Akroyd. 2, S. Matthew. *hc*, J. Jeken.

POLISH.—Cockerel.—1, H. Beldon. 2, P. Unsworth, Newton-le-Willows. Pullet.—1 and *hc*, H. Beldon. 2, G. C. Adkins, Birmingham.

FRENCH.—Cockerel.—1, R. B. Wood, (Uxeter) (Crève-Cœur). 2, E. W. Stratford, Maidstone (Houdan). *hc*, W. Dring, Taversham (London); B. Heald, Nottingham (Houdan); J. J. Malden (Crève-Cœur); Rev. N. J. Ridley (La Flèche). Pullet.—1 and Cup, R. B. Wood (Crève-Cœur). 2, H. Chawner, jun. (Crève-Cœur); *hc*, W. Burrows, Diss (La Flèche); W. Outlack, jun. (Houdan); B. Heald (Houdan); E. Lantour (Crève-Cœur); J. J. Malden (Crève-Cœur).

ANY OTHER VARIETY.—Cockerel.—1, H. Pickles. 2, W. A. Taylor. *hc*, A. Darby, Brighorn; W. Grave, Chelmsford; R. S. Woodgate, Tonbridge Wells; Duke of Sutherland; W. T. Fagg, Addiscombe. Pullet.—1, Miss Bith. 2, C. Sidwick. *hc*, R. Wilkinson, Guildford; R. S. Woodgate; T. Fagg; Rev. J. G. Knight; H. Mitchell, Perry Hill.

GAME BANTAMS.—Black or Brown Red.—Cock or Cockerel.—1 and Cup, W. F. Entwistle, Bradford. 2, T. W. Anns, Clapham. *hc*, W. F. Entwistle; Wingfield and Andrews, Sidbury; Capt. Wetherall, Loddington; H. Shumach, Southwell; W. Adde. *Hen* or Pullet.—1, G. Hall, Kingsland. 2, R. Swift. *hc*, T. W. Anns; E. Davis, Wetherill; W. T. Fagg, Addiscombe. Pullet.—1, Miss Bith. 2, C. Sidwick. *Rev* E. S. Tiddeman, Childerich Vicarage; C. W. Boucher.

GAME BANTAMS.—Any other Variety.—Cock or Cockerel.—1, Bellingham and Gill, Burnley. 2, W. Adams. *hc*, W. Adams; T. W. Anns; W. Barton; W. F. Entwistle; F. James; H. Shumach. *Hen* or Pullet.—1, Bellingham & G. L. 2, W. F. Entwistle. *hc*, W. F. Entwistle; J. Smith, Southwell.

BANTAMS.—Black or White.—Cock or Cockerel.—1, H. Beldon. 2, R. H. Ashton. *hc*, T. F. Thile, Lowestoft; J. W. West; W. H. T. Tinsman. *Hen* or Pullet.—1, H. Beldon. 2, G. W. Farwell, Tattenhall. *hc*, G. B. Francis; H. M. Maynard; Rev. F. Tearle, Newmarket.

BANTAMS.—Any other Variety.—Cock or Cockerel.—1 and Cup, M. Leno. 2, E. Kerrieh, Holmwood. *hc*, Mrs. Lee; E. Kerrieh. *Hen* or Pullet.—1, G. F. Hodgson, North Peckerton. 2, M. Leno. *hc*, G. F. Hodgson; E. Kerrieh.

SELLING CLASS.—Cock or Cockerel.—1, E. C. Bulmer. 2, J. C. Brown (Spanish). *Hen* or Pullet.—1, B. B. Hammett, Alot (Nackwing). *hc*, W. Nottage, Northampton (Spanish); C. Sidwick (Cochin); C. F. Barnett (Game). C. C. F. Barnett (Game).

DUCKS.—Rouen or Aylesbury.—1, P. Unsworth. 2, J. K. Fowler. C. T. W. Anns. Any other Variety.—1 and 2, H. B. Smith, Broughton. C. M. Leno (2); J. J. Malden, Biggleswade; H. B. Smith; Capt. Terry, Winchester; J. Watts; R. Wilkinson.

PIGEONS.

POUTERS.—Blue or Black-Pied.—Cock.—1 and Cup, R. Fulton, New Cross. *Hen*.—1 and 2, R. Fulton.

POUTERS.—Red or Yellow-Pied.—Cock.—1 and 2, R. Fulton. *hc*, R. Fulton; A. Vander Meersch, Tooting. *Hen*.—1 and 2, R. Fulton.

POUTERS.—Any other Colour.—Cock.—1 and 2, R. Fulton. *hc*, R. Ashton, Huntingdon. C. R. Fulton; Mrs. Ladd, Calne. *Hen*.—1, E. Pratt. 2, R. Ashton.

POUTERS.—Black or Dun.—Young Birds.—1 and 2, R. Fulton. *hc*, C. C. Ewbank, Biggleswade (2); R. Fulton.

CARRIERS.—Black or Dun.—Cock.—1 and Cup, F. T. Wiltshire, Addiscombe. 2 and *hc*, R. Fulton. *Hen*.—1 and 2, F. T. Wiltshire. *hc*, R. Fulton. *hc*, R. Fulton; W. Massey, Spalding; S. Warrell, Spalding; F. T. Wiltshire (2).

CARRIERS.—Any other Colour.—Cock.—1, W. G. Hammack, Ilford. 2 and *hc*, R. Fulton. *Hen*.—1, R. Fulton. 2, J. C. Ord, Pimlico. *hc*, W. G. Hammack.

CARRIERS.—Black or Dun.—Young Birds.—1 and 2, W. Massey. *hc*, E. Heritage. *hc*, C. H. Clarke, Smeinton; T. Griffith, Addiscombe (3); J. C. Ord; F. T. Wiltshire (3). C. H. Heritage (2); F. T. Wiltshire (3).

CARRIERS.—Any other Colour.—Young Birds.—1, R. Fulton. 2, J. C. Ord. *hc*, W. Massey; T. Mills, Walsall. C. F. T. Wiltshire.

TUMBLERS.—Almond.—Cock.—1, R. Fulton. 2, J. Ford, London. *hc*, J. Ford; R. Fulton. *Hen*.—1 and 2, J. Ford. 2 and *hc*, R. Fulton.

CARRIERS.—Kites, Sparrows, or any other SHORT-NECKED VARIETY.—Cock.—1, W. R. & H. O. Blenkinsop, Newcastle. 2, R. Fulton. *hc*, R. Fulton; J. B. Jayne, Croydon. *Hen*.—1 and 2, W. R. & H. O. Blenkinsop. *hc*, J. Ford; R. Fulton; H. W. Hale; G. South London.

BARES.—Cock.—1, 2, and *hc*, R. Fulton. C. H. M. Maynard; F. T. Wiltshire. *Hen*.—1 and 2, R. Fulton. *hc*, H. M. Maynard.

BARES.—Young Birds.—Cock or *Hen*.—1 and 2, Miss Hedley, Redhill. *hc*, F. Waller; S. Warrell. *hc*, H. Heritage.

JACOBS.—Red or Yellow.—Cock or *Hen*.—1, R. Fulton. 2, T. W. Swallow. *hc*, R. Fulton (3); Nalder & Roper, Croydon; G. South (2); A. A. Vander Meersch. C. H. M. Maynard. Any other Colour.—Cock or *Hen*.—1, Nalder & Roper. 2, R. Fulton.

TURBITS.—Plain, Peak, or Shell-Crowned.—Cock or *Hen*.—1, Nalder & Roper. 2, R. Fulton. *hc*, E. H. Jones. *hc*, O. E. Gresswell; Nalder & Roper (3); R. Fulton (2); G. South; J. Edge, Erdington; P. H. Jones. C. H. Mitchell; G. H. Gregory, Taunton; J. Edge.

DRAGONS.—Red or Yellow.—Cock or *Hen*.—1, S. C. Betty, Camden Town. 2, G. South. Any other Colour.—Cock or *Hen*.—1 and 2, G. South.

TRUMPETERS.—Cock or *Hen*.—1 and 2, R. Fulton.

TUMBLERS.—Goldheads, Beards and Mottles.—1, R. Fulton. 2, J. Ford. *hc*, R. Fulton (2); G. South; J. Watts (2).

OWLS.—Forsyth.—R. Fulton. 2, W. R. & H. O. Blenkinsop. *English*.—1, P. H. Jones. 2, A. Mangual.

FANTAILS.—1, J. F. Loversidge, Newark. 2, H. M. Maynard. *hc*, R. Fulton; S. Wyllie, East Moulsey; H. Yardley, Birmingham.

MAGPIES.—1, E. L. Corker, Croydon. 2, J. Watts.

ANTWERPS.—1, —Wright, Birmingham. 2, C. F. Copeman, Birmingham.

ANY OTHER VARIETY.—Cup. A. J. Heath, Croydon (Swallows). 2, —Eeden, Hammersmith (Pigmy Pouter).

SELLING CLASS.—1, Nalder & Roper. 2, J. F. Mason. 3, A. J. Heath (Trumpeters). *hc*, J. Ford (Mottles); F. Lewis, Addiscombe (Black Carrier); J. E. Mason; H. M. Maynard (Barbs); W. Tomlinson, Amptill (Red Swabs); Nalder & Roper (Red and Black Turbits and Red Jacobins); E. Roper (White Fantails); Mrs. Evans, Tooting (Red and Blue Pouters); W. Massey, C. M. Coleman (Dragons); J. A. Greenfield, Croydon (White Dragon and Carriers); J. Ford (Almonds); H. M. Maynard (White Fantails).

HOMING BIRDS.—1, J. Sparrow, London. 2, W. B. Tegetmeier, Finchley. 3, M. T. Clarke. *hc*, A. Bentley, Woodford; A. Christy, Lewisham; W. B. Tegetmeier.

JUNCOES.—Poultry: Mr. Teabay, Fulwood, Preston; Pigeons: Mr. Esquilant, Brixton.

objects are to be the encouragement of the breeding of Pigeons, the raising of the standard of the same, and the more frequent and regular meeting of fanciers." A society with such objects has long been wanted in the district, and now that one has been formed, we hope it will secure the patronage and support not only of exhibitors, but also of those who keep and breed for fancy alone. The first of a series of monthly exhibitions was held at Miss Northrop's Restaurant on Thursday last, and two classes of English Owls and Dragons respectively, with three prizes in each, produced some excellent specimens. The winners in Owls were adults, and in Dragons young birds of this season. The prizes were awarded by Mr. E. Hutton, Pudsey.

PIGEON CLASSES AT THE CRYSTAL PALACE SHOW.

I OBSERVE a great oversight on the part of the Committee, as in seven-eighths of the Pigeon classes cups are offered, yet, though the entry-fee is the same, two high-class varieties—namely, the beautiful Tumblers and the sturdy Barbs, have no chance of gaining a cup. I enclose my address, and shall be pleased to give a guinea towards a cup for them if the Committee do not reconsider this part of their schedule, as I think both varieties have always received good entries; and I also notice by the old catalogues that one gentleman has always given the Committee a cup for Barbs at each of their shows, and I regret his former liberality is, as it were, cold-shouldered.—A. S.

NOTES ON WHITBY AND SCARBOROUGH CANARY SHOWS.

(Concluded from page 281.)

BEFORE proceeding with my review, I may say that my attention has been kindly drawn to an error which appeared in my notes last week. I there stated that No. 44, the property of Mr. Caleb Worth, took the second prize in the Clear Buff class at Whitby. I should have said No. 24, Mr. Joseph Andley, Leicester. The mistake arose from a printer's error in the margin of the catalogue.

At neither place was there a respectable show of Belgians. Committees, even with the most laudable desire to furnish a class for as many varieties as possible, must consult the treasury, and when it is found that any particular arrangement necessarily entails a certain loss, one cannot be surprised at their making a black mark in the register opposite the name of the delinquent class. I would suggest that at the early shows the Yellow and Buff Belgians, both Clear and Ticked, should be grouped in one class to be shown for Belgian properties. This may seem an insult to the admirers of this remarkable bird, but if they take only a cursory glance at the paucity of entries at early shows, they will see that it bids fair to resolve into that or worse. There was nothing of great merit at either place, but Mr. Bulmer's and Mr. Harrison's birds were far in advance of the rest, and when in better show condition may develop beauties which birds of this class in a backward state can never do.

Yorkshire birds were in force, thirty-eight competing at Whitby in two classes, Clear Yellows and Clear Buffs; and thirty-four at Scarborough in two classes, Yellows and Buffs combined, and a class for Yellow and Buff Variegated. Some of the specimens were really grand birds, the prize-winners being the admiration of many. Messrs. Fawcett, Mr. Luke Belk, and Mr. Johnson appear to have got a fine strain of these old-established favourites in the north, which eclipsed anything of the kind I have yet seen. There is a growing disposition to improve the colour, which, if it can be done without sacrificing any of the distinctive points of the bird, will render their objects of great beauty.

Cinnamons were fairly represented. Yellows and Buffs were in one class at Scarborough, an arrangement most undesirable in any case where colour is a primary consideration, for I hold it to be next to an impossibility for anyone to judge satisfactorily under such circumstances. An accurate conclusion as between two things can only be arrived at by comparison, and no true comparison can be instituted between dissimilar things. Where a wide difference exists, some approximation to truth may possibly be arrived at; but in the case of high-class birds it is not easy to say this is a better Yellow than that is a Buff. Messrs. Wallace & Beloe showed a remarkably high-coloured Jonque, and Mr. Bexson a very fine Buff, both splendid birds. Mr. Bexson was first with his Buff at Whitby, beating a good field by half a length; the second, Mr. Mills's, being a very level bird, rather small, but all over a nice cinnamon, and good ones seem hard to find just now. Preen & Rymell, a new firm, showed a good Yellow at Whitby, and Mr. Bexson's second to it was an excellent hen. I may add that Wallace & Beloe's bird was rather soft, but I fancied it was a hen also.

Of Lizards it would be impossible to speak too highly. In

BRADFORD AND WEST RIDING COLUMBARIAN SOCIETY.—This has recently been established, and according to Rule 1, "The

Golden-spangled birds, Mr. J. Taylor, of Middlesborough, stood alone—Taylor first, "the rest nowhere." But "the rest" included some splendid Lizards. Mr. Ritchie's second was a beauty; and Messrs. Mann & Jackson sent good birds, both Gold and Silver, from Burton-on-Trent.

Silver-spangled birds were very superior indeed. Both at Whitby and Scarborough Messrs. Greenwood & Swann, of the latter place, were first with a bird of extra size and quality, which had the merit of being bred by themselves. Mr. Mackley's second was also a bird of extra quality. The awards were alike at both places, except that at Scarborough Mr. C. Greenwood was second with a Yellow hen, also home-bred, nothing extra in colour, but well capped and spangled. To individualise further would be invidious. There was not a bad Lizard among the lot.

The Manchester Cobby birds, in the Any other variety, were worthy of great praise, but it is long since I saw such a head as Mr. Ashton's mop.

Goldfinch Mules were unusually forward for the time of year. Mr. Hawman's first Yellow at Whitby, where there were separate classes for Jongs and Mealies, was in excellent trim, and a fair bird withal: a trifle wanting, but a week or two ought to supply the deficiency. Mr. Mills showed a very good second-class Yellow of his own breeding, a credit to the Salem Villa aviary. It was only partially moulted, but will make a lengthy symmetrical bird. Mr. Hawman's Buff is a perfectly clear bird, or apparently so. The class was simply for Buff without any restriction as to marking, necessitating an examination, in which case it would have been only the gratification of inordinate curiosity to have examined it at the risk of losing a feather. It is a lovely bird. Mr. John Drake, of Ipswich, also showed an almost absolutely Clear Buff, ticked only under each pinion. Mr. Mackley's bird is evenly marked: fourteen white feathers in each wing, clean tail, and good eyes, which, however, might be more decided in the pencilling.

In the Any other description of Mule class at Whitby, there was one of the best, perhaps the best, Linnet Mule ever seen. It was exhibited by Mr. Stevens, of Middlesborough, and appears to be marked only on each wing lightly, one wing a trifle more than the other, with a single black feather in the tail. There are now three wonderful Linnet Mules "out," and in a future paper I purpose giving their markings with a view to eliciting expressions of opinion as to their respective merits.

The display of Foreign Birds at Scarborough was very effective. It is a pity this part of our shows is not more encouraged. There are obstacles in the way, perhaps, and the entries in most cases being local may explain them.

Of the management of these two Shows too much cannot be said, and richly they merited the large measure of success.—W. A. BLAKSTON.

BEES AND HONEY AT FLOWER SHOWS.

With reference to the remarks of "SOUTH LANCASHIRE BEE-KEEPER," who says that he believes that the Middleton Agricultural Show was the first to introduce bees, I wish he had given the date, as I think that the Exeter Horticultural Society may claim precedence in this respect. For thirty years I know that the Exeter Society has given prizes for honey, both in the general department and for cottagers; and during the last eighteen years observatory and glass hives peopled by living bees have been exhibited by myself and others. I am quite sure, however, that no society of late years has gone to work in a better manner than the Burton-on-Trent Floral and Horticultural Society, which deserves every encouragement for the admirable arrangements, and for the liberal spirit manifested towards bee-keepers.—S. BEVAN FOX.

ARTIFICIAL QUEENS.

My method of rearing queens for the purpose of italianising native stock is as follows:—I commence feeding on Italian stock in March, placing two frames of drone comb about the middle of the cluster, the 1st of April, so as to have drones the 1st of May. As soon as drones fly, I remove the queen from the hive, which I will call A, to another hive, B. Six days after the queen is removed I examine each comb containing brood in A, and find out the number of queen cells I shall be likely to get, and stock as many nucleus hives as I can get queen cells for. This brings us to the construction of

Nucleus Hives.—As I use them, their size depends upon the size of frame in large hive. With combs 12 inches long by 10 deep in large hive, I use combs for nuclei, 4 inches long by 5 deep, so that one large comb makes six small combs for nuclei. For frames I use strips 1 inch wide by one-fourth thick, pieces cut as follows:—Top 5½, bottom 4½, and ends 5 inches long; nail top to ends half an inch from each end of top piece, and bottom on to ends flush with outside edge of ends. This makes a frame 4 inches long by 5 deep, inside measure. I use inch stuff for boxes, and for above-sized frame pieces would be cut. Sides, 7 inches long by 6½ deep; ends, 5 inches wide by 6½ deep;

bottom, 7 by 7 inches; cover same; half inch from one end of end pieces saw across and half inch deep; clip this out from end, and this furnishes rabbet to support the frames. From the centre of the other end of one of end pieces cut out piece three-fourths of an inch wide by one-half deep; this gives entrance for bees to box. About the middle of the other end piece bore an inch hole, cover it on side, rabbet is made (inside) with wire cloth, and on the other side (outside) with a button; this regulates the ventilation. Nail the sides on to and flush with end pieces; then bottom to sides and ends. I now place three frames in each box, having filled one frame for each box with empty comb.

Before stocking the nucleus hives, I examine hive A, from which the queen was removed, and find, say, six queen cells, some sealed, others with larvæ. I then remove two combs that have the most sealed brood with bees just hatching, and in their place put empty worker combs, close up the hive, shake off the bees on the combs removed in front of the hive, lay the combs on a board, and with a sharp thin-bladed knife cut lengthwise 5 inches from top or bottom; then across, from top to bottom, 4 inches from both ends. The two combs furnish comb for twelve small frames; fill two empty frames with pieces cut, filling one with a piece cut from the top, and the other with a piece cut from the bottom of the comb. The top furnishes the honey, and the bottom piece the brood. Place these with frame of empty comb before mentioned, into a box, the frame of brood between the others, filling all six boxes in the same manner. Generally in filling the frames with comb, I lay the frame on the comb, and mark the size from the inside of the frame, cut out, place the frame on the comb, and press down on the frame until the comb fills the frame.

The boxes are now ready for the bees. I return to A, smoke bees well, giving them time to fill with honey, then remove the comb with adhering bees, hold it over the small hive, and brush off the bees carefully from the comb into the hive until the combs are covered; then put on the cover and set aside, the entrance having previously been covered with wire cloth and the ventilator left open. Stock all the boxes or nucleus hives with bees in the same way. I keep them closed up at least two days (and if the nights are cold I cover them with woollen cloths), then just before dark place the hives on stands and give the bees their flight.

I would also say that if the hives are stocked with bees between the hours of ten and four, there will be a greater number of young bees secured than if stocked morning or evening, consequently the nuclei will lose less bees by their return to the large hive.

The next day I remove all sealed cells from A, to nuclei, and continue doing so as the cells are sealed until all are removed.

Transferring Queen Cells to Nuclei.—If the cell is built on the face of the comb, I cut through the comb about an inch from the cell on all sides, take the middle comb from the nuclei containing brood, lay a piece of comb containing the cell on the face of the comb, about the middle; mark the size, cut out, and insert the cell. When the cell is built on the edge of the comb, and projects lower than the comb, a piece must be cut out to match on the comb (lower side) in which it is to be placed, so as not to bruise the end of the cell, care being taken to always place the cell on the comb in the same position in which it was built by the bees; as soon as the cell is in its place return the comb to the nuclei.

When the queen hatches (which will be in seven days from the time the cell was sealed), I remove the frame with the empty comb, take out the comb from the frame, and fill it with comb containing brood, inserting empty comb from where I cut it out, and return the small frame to the nuclei. When this is done the queen and workers will not desert the hive.

I lost a very handsome queen this season by neglecting to do this, and some years ago, when I first commenced raising queens, I lost a good many in this way. When the queen is left in the nucleus hive some time, the bees may make preparations, and swarm the same as in a larger hive; but where there is honey and brood they will not desert the hive. In from five to ten days after hatching, according to weather, there will be a laying queen in the nuclei, provided she has not been lost in flight, and is then ready to be placed in the full or large hive.

Introducing Queens.—Take a piece of wire cloth 4½ by 4 inches, roll together lengthwise, pound one end together about half an inch, then flatten it the whole length, so that it will be three-eighths of an inch through. Remove the queen from the hive into which the young queen is to be introduced. Six hours after put the young queen in the cage, close it up with a paper wad, and suspend it in the hive, between the combs, with a short piece of wire, for forty-eight hours. I then remove the cage, examine the combs, and destroy all the queen cells, remove the paper wad from the end of the cage, and cover it with one thickness of newspaper, tying it on; wet the paper, then smear it with honey, and return it to the hive, smoking the bees well, and close up the hive.

In taking up the honey the bees will break through the paper and liberate the queen. As this is done when the bees are quiet, the queen will be very likely to be well received. When the queen cage is first removed from the hive, should the bees seem bent on getting into the cage, it is not safe to liberate the queen. When this is the case, all queen cells should be destroyed and the cage returned to the hive and left twenty-four hours longer.

I can generally tell by the action of the bees on the cage when removed whether it is safe to give the queen her liberty.

We will now go back to the hive A, from which the cells were taken. If more cells are wanted, bring back the queen from B to A, and when the cells are sealed over in B, proceed as before. If no more cells are wanted, one should have been left in A to supply the queen. As the season advances and the nucleus hives become well stocked with bees, pollen, and honey, cells can be started in them and as good queens raised as though they had been started in a large hive. This is done by simply taking a piece of comb 3 inches long by half an inch wide from a large hive containing eggs, and inserting it in the comb of nuclei. A piece 2 inches long and three-fourths wide should be cut out immediately under the comb inserted, so as to give room for the queen cells, as they will project below the comb on which they are built. When queen-raising is to be continued for some time, it is also best to supply several of the nucleus hives with drone brood, so as to have drones, should they be destroyed in the large hive.

The way of introducing queens which I have described is Mr. Langstroth's, and although there are other ways, yet for safety from loss I prefer his method. During the season of 1871, I introduced between thirty and forty queens in our apiary, losing only one. There has been a great deal written of late favouring the raising of queens in full colonies. My experience is that where the nucleus hives are well stocked with bees, brood, pollen, and honey, as long-lived and handsome queens will be secured as those raised in full colonies, and at a great deal less expense.

The whole apiary can be stocked with young queens in this way the first season, and should any of the stocks prove hybrids, the queens can be changed next season.

It will pay the bee-keepers to keep a record of the date when a young queen is introduced or succeeds an old queen by swarming, and when three years old replace with a young queen; for after that age they are less fertile, and may die when it is impossible for them to be succeeded by a fertile queen. I think many stocks are lost every year that would be saved if attention were given to removing queens after their third year.—J. E. MOORE, *Rochester, Pa., U.S.*—(*American Paper.*)

PETTIGREW'S SYSTEM.

LAST year I tried Pettigrew's plan of very large hives, and hoped to find at least 30 lbs. of honey in each, but, unfortunately for me, they were not half full of comb, and contained but little honey. I united three together; the contents of the two broken up were only 11 lbs. and 14 lbs. Will it be safe to leave the united hive, as it is only half full of combs, giving it a good supply of syrup, or will the bees die of cold, or had I not better at once join the bees to my Woodbury stocks?—H. F.

[We do not think you must condemn the system of large hives as advocated by Mr. Pettigrew from your experience during one season. We have little doubt, if your whole plan of management were inquired into, that he would say that you have failed to follow his instructions in some important particular. As we have had no personal experience of Mr. Pettigrew's hives and mode of management, we cannot say in what particulars you may have erred. Though ourselves preferring moveable frame hives, we have no doubt that Pettigrew's plans thoroughly carried out will be found to be remunerative. Provided you really do feed the united bees liberally, there is no reason why you should not succeed in keeping the bees alive and vigorous until spring, but you must not expect the stock to do so well for you next summer as if it were at this time full of combs. It will be advisable to weigh the hive before commencing the supply of food, and occasionally as you proceed, as it is probable that a considerable portion of your supplied food will be made use of in the construction of new comb. You must be prepared to administer a great many pounds of syrup.]

BEEES IN HERTFORDSHIRE.

I HAVE lately taken great interest in the different notes on apian matters in your Journal. I am quite a young beginner, and am, therefore, glad of all the information your correspondents so kindly give on this interesting subject. I am managing my bees on the system of Mr. Pettigrew, and was, therefore, rather prejudiced against the bar-and-frame hives. But since reading your paper, and seeing such good results from the bar-and-frame hive, I have made up my mind to try one another year. I am very interested in the letter of Mr. R. Symington in your number of August 8th, and consider he has

been very successful indeed this season. I should be glad if he would kindly let me know what kind of hive and the size he used. I, like him, am most anxious to see the hive promised by Mr. Abbott. I should also like to hear the experience of anyone else managing their bees on Mr. Pettigrew's system.

This year I had two swarms from small hives the second week in June. I put each into a 15-inch (inside measure) straw hive. At the end of the season, when I had driven out all the bees, one hive weighed 49 lbs., the other 47 lbs. This weight quite astonished the people about here, who still use the old-fashioned hives, and manage them in the old-fashioned way. My bees are the black ones. I forgot to mention that besides using bar-frame hives another year, I also intend to have an early swarm of Ligurians from Mr. Abbott, and to thoroughly test Mr. Pettigrew's system, of which I am much in favour. I have now ten good stocks, all of which have been well strengthened with bees, and have enough to keep them through the winter.—M. H. G., *Hertfordshire.*

P.S.—I should also be glad to know the names of the publishers of "Langstroth on the Hive and Honey Bee," and the price of it.

[Langstroth's work is published in America, but may be obtained through Sampson, Low, & Co., Fleet Street, or Trubner, Paternoster Row, or, we believe, from Messrs. Neighbour, Regent Street. The price is, we believe, 10s.—Eds.]

THE RETENTION OF EGGS.

Is it known for how long a time a bird possesses the power of retaining its egg? Last summer, from the number of nests in this neighbourhood, the writer was able to study the habits of kingfishers (*Halcyon vagans*) with more facility than usual. The movements of one pair excited much interest. On the 19th October this pair were observed to be busily engaged in excavating a home in the back of the turf chimney of an empty cottage. After many days spent in hard labour this was abandoned; subsequently several tunnels were commenced, in some of them considerable progress was made; then they were in like manner deserted. The seventh resting-place, begun November 26 (there must still be a witchery about number seven even at your Antipodes), was finished, occupied, and therein, on December 24, a brood was hatched. Can there be reason to doubt that the eggs in the ovary of the female must have been in a forward state in the third week in October? At the close of that month the first egg to be laid must have been ready for extrusion. From personal observation we know that our kingfisher lays nearly every morning till the clutch of eggs is completed; the number of eggs to a clutch varying from five to seven. Here we have a bird engaged in laborious, almost incessant exertion, for quite six weeks, physically in a condition analogous to that of a pregnant animal. Three of the homes excavated and abandoned were so far finished that the chamber was hollowed out, so that a deposit of eggs must have been imminent on three occasions during that period of six weeks. It is well known that the domestic fowl, on a change of quarters, will, in its strange home, sometimes retain the egg for hours beyond the usual time of laying, often depositing what is called a double-yolked egg, but we have to do with the freedom of wild nature. It is easy to suggest that our kingfisher relieved itself by dropping its egg; obviously that would be opposed to the marked instinct of so persevering and painstaking a nest-builder; besides, would that mode of acquiring ease be twice repeated by a bird that endured such toil to make a hiding-place for its progeny—toil only to be appreciated by those who have watched its daily work?—(*Nature.*)

OUR LETTER BOX.

SENDING EGGS TO INDIA (*W. M.*).—We have been successful in sending eggs for hatching to Canada and to Portugal. We have never succeeded in getting them in a hatching condition to the East or West Indies. We believe it may be attributed to want of care and precaution, as they were merely recommended to one of the crew, who received a gratuity for his pains, and who most likely put them away in the hurry of sailing, found them just before landing, and said, "He'd be hanged if he had ever been and thought on 'em." We cannot help thinking that with proper care and painstaking they might be successfully taken out. The first thing is to secure very new-laid eggs, the next to pack them very securely in a basket with thoroughly dry moss, and, most important, to suspend the basket from the ceiling of the owner's cabin by a cord sufficiently long to enable them to swing, and thus avoid the constant shaking of a steamer.

QUANTITY OF BARLEYMEAL PER FOWL (*J. D. F. J.*).—We are unable to answer your question, but you can easily test it. Try them first with $1\frac{1}{2}$ oz. per head after mixing. Where they have the advantage of an ordinary run, it seems to us it should be enough for a single feed. The quality of the meal should be considered. An ounce and a half of ground oats, such as they have in Sussex, would do a fowl more good than 3 ozs. of ordinary oatmeal. Try your fowls for a time with the smaller quantity. If they do well, continue it; if they fall off, add somewhat to the allowance.

EGGS BROKEN DURING CARRIAGE (*R. W.*).—In every case an egg broken before it reaches the buyer should be replaced, or the amount returned by the vendor. Bought eggs should be considered to hatch satisfactorily, or, at least, to furnish no ground for complaint if they produce half. There is no

doubt the Carolina's eggs were bad, because the sitting that hatched four would have hatched all had they been equally good. We imagine the Mandarin eggs to have been very stale. It is clear from your description no germ of life was ever developed in them. If at the time of sale all responsibility was disclaimed, we should say you must put up with your loss; but as, on the contrary, everything was said in their favour, we think you may justly ask for the return of half your money, or fresh eggs to that amount when convenient for you to take them.

GIVING CAMPHOR TO FOWLS (S. A. A.).—The camphor should be administered in doses of two pills each the size of a garden pea. It is a most excellent thing to keep some always in the water the fowls have to drink. The indications of coming eggs are increased size from fatness and very red face, the comb also much developed and very florid. Spanish and Dorkings do not lay so early as Cochins or Brahmas. A Spanish pullet with red feathers may be pure-bred, but she is not suited for breeding purposes. There is no such thing as a five-clawed Spanish. Such a one as you describe is a cross-bred fowl.

BANTAMS NOT HIGH-FLYERS (G. B. F.).—The Japanese are among the quietest of the Bantam tribes. We believe the fence you describe, 4 feet high, will confine them. Game and Sebrights fly as well as scared Pheasants.

COCHIN COCK DYING SUDDENLY (Constant Reader).—Cochin cocks are subject to sudden death, and in every instance either the heart or the brain is found to be gorged with blood. It has always been thought, and we have seen it happen, that when one of them indulges in a much longer than the usually prolonged crow, and is at last compelled to bring his head between his legs, he breaks a blood vessel and dies. Your feeding is good, but would be improved by omitting the sharps, and more particularly the boiled potatoes; the latter are fruitful parents of disease among fowls, and especially favour fatal affections of the liver. Barley meal, ground oats, with whole corn for a change, and a run in the paddock or kitchen garden, are all they require for health.

PULLETS' BREATHING DEFECTIVE (H. F.).—Fowls, like human beings, suffer at this time of year from alternations of temperature, and have, like human beings, a tickling at the top of the throat; they also have bad colds, which, if neglected, become inflammations—bad for both parties. Both may be traced to their origin. One has not changed for warmer clothing, and the other, probably, still roosts out of doors. Our treatment of fowls has substituted an artificial for a natural regimen, and we must therefore carry it out to the far end. Our fowls are not fit to roost out; we must therefore compel them to come in. Not only are they less robust than wild birds, but they do not understand the question of shelter so well as they do. When you perceive the premonitory "sniffing," and the short cough, give them at once a little bread and ale and two pills of camphor, each the size of a garden pea. Give water to drink strongly impregnated with camphor. The use of this medicine does away with much risk of infection.

POULTRY SNEEZING (E. J. B.).—Read the previous answer, and adopt the stimulants. Release them at six o'clock, or as soon as it is light. If they go to roost at six, and are not let out till eight, they are in their house fourteen hours. That is very injurious to them at this time of year. It makes them weak, and tends much to the spread of any contagious disorder.

GROUND OATS (N. B.).—Mr. Agate, Slaughtam Mills, near Crawley, Sussex.

WHITBY CANARY SHOW.—The winner of the second prize in Class 2 should Joseph Audley, Leicester, and not Caleb Worth, as previously announced.

MARKET RASEN POULTRY SHOW (S. A.).—Much obliged. Perhaps the Committee another year will raise it above a local show by advertising it.

BARLEYMEAL FOR POULTRY (R. E. H.).—Mix it with cold water, and only use enough water to make it an adhesive yet crumbly mass.

SUMMER RAPE SEED FOR CANARIES (M. H. F.).—It may be had of any respectable seedsman. It is the small brown seed.

PIGEONS WASTING AWAY (E. W.).—Your birds are dying of the disease called "going light"—in fact, consumption or atrophy. It is most prevalent in high-class birds which are too nearly related. The only thing you can do is to give them daily cod-liver oil, either in its usual state or bought in capsules. The latter is the better plan, as the feathers do not become greasy. Indian corn and barley are not good enough. Beans are the best under such circumstances.

BAB FRAMES (J. Howard).—We cannot see any improvement in your suggested alteration of the frames. We have used the Woodbury modification of the Langstroth frame very extensively for eleven years, and have had no reason to complain of their want of stability; nor do we think you would gain anything in facility of removal by the adoption of your proposed method. The form and pattern of the Woodbury frames quite satisfy us; but whether they might not be advantageously made of a much larger capacity, to be used in hives of correspondingly greater dimensions, is a question which we think might, in some districts at least, be decided in the affirmative.

FERTILE QUEENS (E. H.).—By the use of moveable frame hives you can at any time during the breeding season ascertain whether a queen is fertilised or not, and to a great extent determine her condition and quality as a breeder. The age is not so easily determined, unless you are previously acquainted with the history of the hive. We never trouble ourselves about the age of our queens, but when we find that there is a decided falling-off in their fecundity, we take steps to replace them by younger and more vigorous mothers, unless, as it often happens, the bees themselves save us the trouble. By the swarming system of keeping bees you may usually make a pretty good guess at the age of your queens, remembering that the old queen always goes off with the swarm, consequently the stock must have a young queen, and the next year's swarm from that stock will, unless an accident has happened to the queen, be headed by a queen one year old.

LIGURIANISING (S. B. Knowle).—We remarked several things in your recent communication which we thought interesting. First, as to the method you successfully adopted of giving the Italian queen to her new subjects after driving. We suggested this some time back as worth trying, and are glad to find it a feasible plan. We note also the importance of care and time being given, even in the use of green cages. The fact is, that bees are addicted to strange freaks of liking and disliking. The great point seems to be to avoid irritating them in any way when introducing a queen. During the process of driving they seem paralysed with fear, and anything can be done with them. At other times they are soon roused to suspicion and anger. We doubt if the removal of the brood would make any material difference in the manner in which they would receive a new queen; moreover, it would generally prove fatal to a hive to let their home remain tenanted, if by this you mean

minus their old queen. Your experience as to the doubtful value of drones bred by non-impregnated queens tallies with an opinion which we had formed to the same effect, based on the non-success of similar trials of them for breeding purposes. We cannot tell why they should fail in their peculiar functions, but so it seems to be. We have no experience of the value of small drones bred in worker cells. Will you kindly say whether you were satisfied as to the purity of the Italian queens which you sought to introduce into your apiary? You may be able to report of the one which the bees welcomed.

VARIOUS (J. K.).—Better have one large hole 2 inches in diameter instead of the twenty small holes. By no means smother the bees if they are in reasonable strength as to population, but feed them up at once with white crusted sugar. We are feeding largely a number of poor hives which will be most valuable in the spring. If you put 5 lbs. of sugar into a can, and pour 2½ lbs. of boiling water upon it, stirring up till dissolved, you will get an excellent syrup. Set your hive over a box, into which you can place every evening, by a side door, a plateful of this syrup, covered with floats of wood or cork. Feed up to 20 lbs. net weight. Try "Profitable Bee-Keeping," published by the Society for the Promotion of Christian Knowledge.

METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		A.M.				IN THE DAY.					
1872. Oct.		Barometer at top of highest Peak and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Temperature.		Radiation Temperature.		Rain.
			Dry.	Wet.			Max.	Min	In sun.	On grass	
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.		In.
We. 2		29.422	61.2	69.0	S.	54.2	65.1	52.2	88.3	49.2	0.60
Th. 3		29.413	56.8	54.6	W.	55.2	65.3	53.2	110.4	52.1	0.90
Fri. 4		29.876	44.8	42.4	N.E.	54.1	54.3	55.1	76.8	55.6	0.670
Sat. 5		30.227	46.2	45.0	N.E.	51.2	57.1	41.6	91.2	33.6	0.010
Sun. 6		30.554	49.5	47.2	N.	50.6	63.3	36.8	85.2	24.1	—
Mo. 7		30.257	49.5	47.6	S.W.	49.8	62.2	33.7	98.8	21.0	—
Tu. 8		30.036	52.9	52.3	W.	50.7	56.9	46.8	65.5	42.5	0.150
Means		29.943	51.6	49.0		52.8	60.2	42.8	88.0	40.6	0.380

REMARKS.

- 2nd.—A dull damp day, without much of either sunshine or rain.
 3rd.—Dull early, then fine to noon, when it suddenly clouded over. Short thunderstorm, with hail and heavy rain, commencing at 12.20, but all over in fifteen minutes, and beautifully fine by 2 P.M.; rain at 6 P.M., and a dull evening.
 4th.—Dark dull morning, with rain; very dark at 2 P.M., but fine afterwards.
 5th.—Damp uncomfortable day; the afternoon rather better than the morning.
 6th.—A very pleasant day, though neither warm nor bright.
 7th.—Hazy early, but from 9 A.M. a very bright, pleasant day.
 8th.—Dark and comfortable, slight rain falling nearly all day.
 A dull damp week, slightly cooler than the preceding, but very near the average for the season.—G. J. SYMONS.

COVENT GARDEN MARKET.—OCTOBER 9.

The same moderate tone prevails in our market that we have experienced for some time past, buyers limiting their operations to just what is necessary for immediate consumption. There is nothing offered of any keeping qualities but bad goods and some Almeida Grapes. A few Peaches, both home-grown and foreign, are offered, and command rather high prices.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.	
Apples.....	1	sieve	3	0 to 0	Mulberries.....	1	lb.	0	0 to 0	
Apricots.....	doz.	0	0	0	Nectarines.....	doz.	0	0	0	
Cherries.....	per lb.	0	0	0	Oranges.....	100	lb.	0	20	
Chestnuts.....	bushel	0	0	0	Peaches.....	doz.	10	0	25	
Currants.....	1	sieve	0	0	Pears, kitchen.....	doz.	1	0	0	
Black.....	doz.	0	0	0	dessert.....	doz.	2	0	0	
Figs.....	doz.	1	6	3	Pine Apples.....	lb.	4	0	8	
Filberts.....	lb.	1	0	1	Plums.....	1	sieve	5	0	0
Cobs.....	lb.	1	0	1	Quinces.....	doz.	1	0	2	
Gooseberries.....	quart	0	0	0	Raspberries.....	lb.	0	0	0	
Grapes, hothouse.....	lb.	2	0	5	Strawberries.....	1	lb.	0	0	
Lemons.....	100	6	0	10	Walnuts.....	bushel	15	0	30	
Melons.....	each	2	0	5	ditto.....	100	3	0	0	

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.	
Artichokes.....	doz	2	0	to 4	0	Mushrooms.....	pottle	1	0 to 3	0
Asparagus.....	100	0	0	0	0	Mustard & Cress.....	punnet	2	0	0
Beans, Kidney.....	1 sieve	3	0	4	0	Onions.....	1 bushel	2	0	4
Broad.....	bushel	0	0	0	0	pickling.....	quart	0	6	0
Beet, Red.....	doz.	1	0	3	0	Parsley per doz. bunches	2	0	3	0
Broccoli.....	bundle	0	9	1	6	Parsnips.....	doz.	0	9	1
Cabbage.....	doz.	1	0	1	6	Peas.....	quart	1	0	1
Capsicums.....	10	2	0	3	0	Potatoes.....	bushel	3	0	5
Carrots.....	bunch	0	6	0	0	Kidney.....	do.	3	0	5
Cauliflower.....	doz.	2	0	4	0	Round.....	do.	2	0	0
Celery.....	bundle	1	6	2	0	Radishes.....	doz. bunches	1	0	1
Coleworts.....	doz. bunches	2	0	3	0	Rhubarb.....	bundle	0	0	0
Cucumbers.....	each	0	3	1	0	Salsify.....	1 bundle	0	9	1
pickling.....	doz.	0	0	0	0	Savoy.....	doz.	0	0	0
Endive.....	doz.	2	0	0	0	Scorzoner.....	1 lb.	0	9	1
Fennel.....	bunch	0	3	0	0	Sea-kale.....	basket	0	0	0
Garlic.....	lb.	0	6	0	0	Shallots.....	lb.	0	3	0
Herbs.....	bunch	0	8	0	0	Spinach.....	bushel	2	0	0
Horseradish.....	bundle	8	0	4	0	Tomatoes.....	doz.	1	0	2
Leeks.....	bunch	0	2	0	0	Turriups.....	bunch	0	3	0
Lettuce.....	doz.	0	9	1	0	Vegetable Marrows.....	doz.	0	6	1

POULTRY MARKET.—OCTOBER 9.

There is a considerable falling-off in trade; there always is as soon as Game comes in season. Pheasants, like Partridges, appear to be very backward this year.

WEEKLY CALENDAR.

Day of Month.	Day of Week.	OCTOBER 17—23, 1872.	Average Temperature near London.			Rain in 43 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
17	Th		58.8	40.7	49.8	19	29	af 6	0	af 5	15	14	41
18	F	St. Luke.	60.4	40.7	50.6	21	31	6	58	4	16	14	53
19	S	Twilight ends, 6.52 P.M.	59.4	41.7	50.5	22	33	6	56	4	25	6	56
20	SUN	21 SUNDAY AFTER TRINITY.	59.0	39.2	49.1	20	35	6	54	4	55	6	11
21	M		58.4	39.5	49.0	18	37	6	52	4	55	7	after.
22	Tu		58.9	42.4	50.6	23	38	6	50	4	23	8	7
23	W		58.2	39.8	49.0	23	40	6	48	4	23	9	52

From observations taken near London during forty-three years, the average day temperature of the week is 59.0°; and its night temperature 40.6°. The greatest heat was 69°, on the 22nd, 1863; and the lowest cold 17°, on the 23rd, 1859. The greatest fall of rain was 0.96 inch.

GLADIOLUS CULTURE.



R. DOUGLAS, after giving us an excellent paper on the above flower, invites other growers to detail their experience, and I, for one, am glad to contribute my mite, if the Editors think it worthy of a place.

With regard to soil, mine is light and gravelly, and I plant in ground that has been well manured for Dahlias the previous year. To this I also add about 4 inches of well-decayed manure, which is thoroughly mixed with the soil to the depth of 14 inches. Over this I put 2 inches of soil and plant my bulbs, covering each with charcoal dust, which is, I think, superior to sand, being less retentive of moisture, finally covering with about 2 inches of well-pulverised soil that has been exposed to the winter frosts and is free from manures. Here let me caution amateurs against using turf in their Gladiolus-beds, as it is almost sure to contain wireworms, which are certain destruction to the bulb. Three years ago I lost nearly all my stock through adding turf containing this pest, and in my opinion turf is quite unnecessary, as any garden soil, provided it is not of too heavy a nature, will grow Gladioli to perfection if it is well stirred in winter, and a good dressing of well-rotted manure added. With the above treatment many of mine have grown from 5 to 6 feet in height during the past summer, and produced spikes and flowers of very large size.

Here, in the north, I plant my first lot of bulbs as early in February as the ground will permit, and the second lot in March, when all danger of severe frost is past. This year my first lot was planted about the middle of February, and the bed was protected with frame-lights that are used for covering Verbenas grown for exhibition in summer. I can cover about a hundred bulbs in this way, and thus they are protected from rain and frost; if the latter is very severe mats are thrown over the lights. This is much better than raising them in pots, as some do, for it saves all risk of breaking the roots when turned-out of pots. The lights are raised about 6 inches from the soil, and rest on wooden stays, and the whole is equal to a cold frame.

This early planting is quite necessary to get Gladioli into bloom by the shows, which are held in this district from the middle to the end of August. My first lot of blooms, cut from bulbs planted in February, were ready about the middle of August, and I have had a succession from that time to the end of September from the same plantation, proving, as far as the north is concerned, that it is unnecessary to make several plantings as Mr. Douglas suggests, but to plant as early as possible, for some varieties are much later than others, and keep up a succession of bloom till October. It is only in very favourable seasons that bulbs planted in the open ground without any protection can be had in bloom early enough for the shows, except with such early sorts as Shakespeare, Homère, Romulus, &c. It also proves that Mr. Douglas's garden is at least six weeks earlier than my own.

Everyone who grows the Gladiolus must make up his mind to have some losses. The disease they are subject to appears to be quite as great a mystery as the Potato blight; several after blooming magnificently suddenly turn yellow in the foliage, and on lifting the bulb it is quite worthless. This is particularly the case with Eugène Scribe, Meyerbeer, and Molière; I have always to renew these every year with imported bulbs. These imported bulbs generally bloom magnificently the first year, but never so well again; this is more or less the case with all the varieties with me, and I should like to know the experience of other growers on this point. I always pot a few seedlings late to fill up any blanks that may occur early in the season, but it is generally after the bloom is over that most losses occur. Up to the present time I have had very few losses this year.

With respect to the new varieties, I agree in the main with Mr. Douglas. Minerve is the best I have grown and seen, and a very vigorous grower, although rather short in the spike. Ariadne, described as a "bewitching" variety, is, in my opinion, far from it. It is similar to Delicatissima, a little paler in colour. I have a spike of Beatrix by me as I write this; it wants substance of petal, and is inferior to Norma and Eurydice. It is not greatly different in colour from Madame Desportes, which is not only the best white flower we have, but the best variety ever sent out, as far as my experience goes; it has been magnificent with me this year. Jupiter was exhibited in Lord Hawke's stand at Bishop Auckland, and in point of size and quality did not compare favourably with such fine varieties as Horace Vernet, Legouvé, &c., in the same stand; it is, however, an acquisition in colour. Phœbus, Ossian, Celemine, and Antigone I have not grown nor seen.

I should like to have "D., Deal's," opinion of the varieties sent out last autumn. Perhaps he will be able to give us an account of the new ones that are coming out this year. I always read with great interest anything that he or Mr. Douglas writes on Gladioli or Roses, or any other flower, and we must all look to them as the two foremost amateur growers of Gladioli. I should be glad if each would give a list in the Journal of the best twelve and the second best twelve. Perhaps other growers will also favour us with lists of the same number; it would be interesting to compare them, and one could form a good conclusion as to which were the best. The following are what I consider the best—viz.:

BEST TWELVE.

1. Madame Desportes.
2. Adolphe Brongniart.
3. Meyerbeer.
4. Eugène Scribe.
5. Horace Vernet.
6. Monsieur Legouvé.
7. Michel Ange.
8. Madame Furtado (Souchet).
9. Marie Stuart.
10. Orphée.
11. Shakespeare.
12. Schiller.

SECOND BEST TWELVE.

- Rossini.
- Rosa Bonheur.
- Molière (Souchet).
- Minerve.
- Ulysse.
- Armide.
- Lacépède.
- Edith Dombrain.
- Virgile.
- Jupiter.
- Homère.
- Madame Vilmorin (Souchet).

I omit Eurydice and Norma as too late for the north

Princess Mary of Cambridge is good, but uncertain. Marie Dumortier is a good, cheap, light sort; and Romulus ought to be grown for its colour, although narrow and pointed in petal. If I were about to form a collection I would buy several bulbs of such sorts as Engène Scribe, Meyerbeer, Legouvé, A. Brongniart, &c.; three bulbs of such as these can be bought for what you would pay for a new variety, but there is a charm about growing a new variety that you have never seen before which is difficult to overcome, and probably there are fewer inferior Gladioli sent out than any other flower.

One of the greatest pleasures in cultivating Gladioli is the raising of seedlings. I have had several nice flowers this year from seed, one of which is quite equal to the very best-named varieties, and quite distinct in colour. Next year I shall have about three hundred to bloom from seed saved of A. Brongniart, Marie Stuart, De Humboldt, and other fine sorts. In a commercial point of view I fear we shall never make much of seedlings in this country; you may raise a first-class seedling this year, but it must take at least five or six years to get enough stock to send it out, and probably by that time it will be far surpassed by others.

I may add, in conclusion, that Gladioli have been well and numerous shown this year in the north, especially so at the Bishop Auckland Show, which is probably the best autumn show of cut flowers in the provinces. The receipts this year are close upon £1000, and nearly the whole of this amount was taken in shillings from one to four o'clock in the afternoon; it is only a one-day's show, and the receipts this year are not unusual as compared to those of previous years.

A word about Roses, and I shall conclude. A correspondent recommends that we have another election: I would suggest that it be deferred till after the new varieties sent out last autumn are proved from plants worked in the open ground; as yet they have only bloomed from plants turned out of pots, and it will take another season before they are thoroughly proved. So few new Roses were sent out the previous year, that I think they would scarcely influence the former lists.—J. B., *Darlington*.

That grand flower the Gladiolus was well represented at the last Crystal Palace Flower Show, Mr. Kelway alone sending in one batch six hundred cut blooms. I suppose no one person has ever exhibited so many of any other flower at once, Roses not excepted, and what to me made the beautiful six hundred more interesting was the fact that they were all seedlings.

It was not long ago I read in "our Journal" that no seedlings were likely to be raised here that could compete with those from France. Well, here is proof to the contrary, Mr. Kelway taking the first prize for the best thirty-six, thirty-three of which were his own seedlings. Hurrah for "Merry England!" The thirty-three were very fine, but I should have liked to have had the chance of picking a dozen bulbs from the six hundred, putting the others out of the question. I was glad to see, also, some very good seedlings shown in Mr. Douglas's stand. Both he and the Rev. H. H. Dombtrain did well, but Lord Hawke's for finish were perfectly wonderful. Few people will believe that so lovely a flower as the Gladiolus can be hardy, and yet how simple it is to grow fairly well! Dig deeply, mix well with the soil some leaf mould and well-decomposed cow manure, with some sand if the ground is stiff and clayey, and the reward is worthy of the trouble.

As regards seedlings, I find them very easy to obtain—in fact, I know of no flower of any pretensions that can be bred more easily or with more certainty as regards colour; the greatest disappointment is in the petals sometimes being too thin and flimsy, and out of form. I have been trying for strong constitution, and I think I have succeeded partially, many of my seedlings blooming well with me the second year. On the other hand, I find some of the seed does not vegetate till the second year. That from the lightest-coloured parents usually produces the weakest seedlings at first. Again, I find that in some the pollen of others will not take at all, while that of a different form will often produce large seed-pods. In short, I find the culture of the Gladiolus most interesting, and I hope to show some of my own raising next year if I have the opportunity, as I have a few that I am quite in love with.

What I would advise my fellow amateurs to do is, Buy in the spring some of the very best named varieties, bloom them, cross them, save the seed of them, sow it, watch it, tend it, and most likely the result will be very gratifying. No flowers are more beautiful when well grown. Occasionally here and there one will die-off without seeming cause, but Roses and

other plants do that. We must not expect perfection in anything, though we ought to strive for it. If we get much pleasure let us rest content, though there be a little pain.—HARRISON WEIR, *Weirleigh, Kent*.

HARDY GEMS.—No. 3.

CAMPANULA TURBINATA.—For upwards of two months this gem has been producing its charming flowers in the greatest profusion in my London garden, and although now on the wane, it is still very handsome, and the delight of all beholders. It forms a dense compact tuft, never exceeding 8 or 9 inches in height, blooms included. The flowers are large, erect, bell-shaped, and rich dark purple. There is also a white form, which resembles that described in every respect saving colour. I would ask why these are not more grown, for they are perfect jewels in the flower border. They come from the mountain regions of Transylvania.

CAMPANULA RAINIERI.—This is a superb little species. The plant forms dense rosettes, and whilst it seldom exceeds 2 inches or 2½ inches in height, the flowers, which stand erect, measure upwards of an inch in diameter. The colour is light blue, and at present I have not seen a white form of it. Its very dwarf tufted habit constitutes it one of the most charming subjects for the rock garden. Native of the Italian Alps.

CAMPANULA ISOPHYLLA.—Another species of this favourite genus of mine, well deserving a place in every garden. It grows about 8 or 9 inches high, producing in abundance its lovely flowers, which are upwards of an inch in diameter, and of a charming bright blue. It blooms during August and September. Native of the Eastern Apennines.

SILENE VIRGINICA.—For the introduction of this really beautiful plant we are indebted to the unwearied energies of the Messrs. Backhouse & Son, of York, who deserve the thanks of the horticultural world for their endeavours to popularise and foster the love for herbaceous plants amongst the rising generation of amateurs and gardeners. This *Silene* attains a height of from 1 to 2 feet. It is a native of the United States of America, and is familiarly known as the "Fire Pink," from the brilliant appearance of its large deep crimson flowers, which are produced throughout the months of June and July. To succeed well with this plant it must be placed in a somewhat shady situation, and the soil should consist of about two parts good leaf mould to one of light loam, with the addition of a small portion of sandy peat.

DELPHINIUM BELLADONNA.—Although by no means new, it is undoubtedly one of the choicest of border flowers. Unfortunately with me it is somewhat delicate in constitution, yet it flowers abundantly; still, it does not increase much in size from year to year, and as it is perfectly barren there is no method of propagating it save by division. The flowers are of a lovely sky blue, a colour so rare amongst plants that it renders it at once conspicuous and effective.

DELPHINIUM NUDICAULE.—This species is a new introduction from California, and to all my readers who have not yet purchased the plant my advice is, Do so at once. It is dwarf in habit, seldom exceeding 18 inches in height; the leaves are somewhat small, palmately lobed, and of a dark green. The flowers are large and freely produced both in terminal and axillary spikes; the sepals and spurs are bright orange, and the petals bright red. This plant, I think, cannot fail to please every one when it becomes established, its dwarf habit and brilliant colour being great recommendations; but I cannot endorse the views I have heard respecting its becoming a good bedding plant.—EXPERTO CREDE.

GARDENERS WITH CHILDREN.

I CANNOT but think that your correspondents, who have treated this subject either from a religious or sentimental point of view, are under some misapprehension as to facts. Certainly, in my neighbourhood, married gardeners with families are the rule rather than the exception. I imagine that children are objected to only when the gardener lives on the premises, and in this case it is neither hard-hearted nor blameable for an employer to prefer a man without a family. There is no outcry against persons who prefer single cooks, housemaids, or footmen, and the gardener who lives within the curtilage is removed only in one degree from those who live in the mansion. Children are almost as objectionable among ripe Cherries as they would be when injuring the household furniture. As to blaming the parents of such children, the blame must

be laid on human nature. The idea of model children, who in fact would not be children, is Utopian, and at least let this Utopia be realised before employers are denounced for selecting such gardeners as they think will suit them best.—G. S.

CULTURE OF LAPAGERIA ROSEA IN POTS.

THIS being one of my favourite plants, I naturally felt somewhat interested in a letter on the subject from your correspondent "L.," at page 262. I can easily imagine his 326 blooms open at one time being a magnificent sight. This he tells us is the result of the planting-out system, which undoubtedly has its advantages in many ways; but I will now say a few words in defence of pot-culture, which has also its advantages.

The slow progress made by the plant to which "L." refers would, doubtless, cause him to become dissatisfied; for where there is nothing but hard small shoots good flowers cannot be produced. Something better than that is to be obtained from pot-culture. With us it is far in advance of the planting-out system, and I maintain that, where space permits, a few plants should at all times be grown in this manner. Your correspondent says he does not give any heat: this was undoubtedly the cause of the plant's slow progress; for although when planted out and well established no heat need be given, still, when confined to the pot, a little encouragement during the spring months is very essential, if anything like satisfactory results are to be expected. I do not assert that a strong

The prizes are very liberal, the highest being for Carter's Imperial Swede Turnip

BEET CULTURE.

To grow Beet well the soil should be rich and light.⁵ Select the ground in autumn, and trench it to a depth of 18 inches, or according to its natural depth, placing in trenching a good layer of thoroughly decomposed manure between the top and bottom spits. If the soil is at all heavy it should be thrown up in ridges, so as to expose it to the weather, and the surface must be levelled during dry frosty weather in February or early in March, but on no account meddling with the soil whilst it is in a wet state. Frequent stirrings in dry frosty weather will greatly contribute towards bringing the soil into a highly pulverised state, which is essential to fine-shaped, unforked roots.

If a well-pulverised soil is essential for the production of fine roots, a well-pulverised surface is equally so for the successful vegetation of the seed. Too fine a seed-bed cannot be made. The seeds should be sown in drills an inch deep and 15 inches asunder; drop the seeds about an inch apart, for although this is much too close, it is well to be liberal in sowing, and so provide against mishaps. Cover the seed with fine soil, and if the surface is not in a highly-pulverised state, cover an inch deep with light sifted soil. The best time to sow the seed is the second week in May.

When the plants are just coming through the soil I give a



Lapageria rosea.

heat is needful—that of an intermediate house will suffice. The most convenient and suitable plan is to place the pots on the stage or bench, then, if the plant is on a trellis, fasten to it some strong string, which should be taken in an upright direction to the roof. If the plant is not on a trellis, some sticks will answer. The young shoots twine up the string with great rapidity, and no tying is required. In this manner they have every possible chance of ripening the growth; after which they may be taken down, cleared from the string, and placed neatly on a trellis in the conservatory, or allowed to hang in festoons from the roof, in which manner they look very pretty.

We not only grow *Lapageria rosea* (see accompanying illustration) in this way, but also its noble companion *L. alba*, of which we have two plants covering string nearly 15 feet long, and furnished from top to bottom, not with small hard shoots, but such as have more the appearance of strong shoots of *Asparagus* pushing through the soil than those of the *Lapageria*. The white-flowered *Lapageria*, with plants of the other variety, have kept up a continual supply of bloom during the past three months. The flowers, by the way, are admirably adapted for cutting, and in my opinion not to be excelled even by the most choice *Orchids*, the white variety in particular. The latter has produced as many as eight flowers in a cluster, while many blooms of the rose-colored *Lapageria* have measured 3 inches or more across.

I trust the foregoing will give your correspondent a somewhat better opinion of pot-culture, and should he again make an attempt I hope it will be successful.—C. J. WHITE.

MESSRS. J. CARTER & Co's ROOT SHOW.—This is to be held on the 22nd of November, and the prizes are to be contested for by Messrs. Carter's customers only. The roots the firm exhibit at the Smithfield Cattle and other shows are grown from seeds sold by Messrs. Carter and by their customers.

dressing of lime. This checks the slugs, which are very partial to Beet in a young state, and keeps off the "leather-coat," a grub which eats it off at the collar; and when the plants have a pair of rough leaves I give a dressing of soot sufficient to make them quite black. The soot is also a good manure. I further give a sprinkling of salt a day or two after the seed is sown, and a dressing of guano after the final thinning. These dressings of hand manures may not be essential, but there is a great difference between the plants that are so dressed and those that are not. Half a peck of salt to 30 square yards, and 2 lbs. of guano to the same extent of ground, are sufficient.

Keep the ground free of weeds by frequent stirrings with a hoe, which it is well to continue until they cannot be practised without injury to the leaves. Thin-out the plants to 9 inches apart before they become crowded; but it is well to do it gradually, as it may happen, and has occurred with me, that thinning to the full distance when the plants are small may result in a thin uneven crop owing to the inroads of vermin.

Beet may be transplanted, but the practice is not advised. It is attended with risk if the weather is dry, therefore ought to be done in moist weather; and however carefully the plants are transplanted they are dwarfed, and the roots are not nearly so fine as those not transplanted.

In October, or early in November, the roots are to be taken up carefully without breaking or bruising them, and the tops cut off, but not into the quick. They should be stored in sand in a cellar or other place, which cannot be too cool if secure from frost. A few degrees of frost will not injure the roots so much as growth consequent on their being kept in a warm place. In March any growth the roots have made should be removed, and they may then be placed in sand under a north wall, with a covering to throw off the wet; in this way they will keep in good condition until July.

Beet may be said to be in season all the year round, for by sowing a few seeds early in April in a sheltered spot we obtain roots sufficiently large for salads by the middle of July, and the stored roots will keep good up to that time. The best variety for the early sowing is Dewar's Dwarf Red. The kinds of Beet that I have grown are:—

Dewar's Dwarf Red.—Roots of good shape and size, top short, roots formed nearly half their length above ground. The colour is a deep red. It is very desirable on account of its attaining a good useful size long before any other kind I have grown; in fact, when the others are the size of the little finger this kind has a circumference equal to four fingers.

Whyte's Black.—Roots large, not of good shape, rather long and furrowed; top large. If sown before the middle of May the plants are apt to run to seed. The flesh is of a very deep blood red, approaching to black, tender, and of fine flavour. Although a large and coarse-looking kind, it is one of the most profitable and best-coloured sorts in cultivation. It is next to Dewar's Dwarf Red in coming early to a useful size. About 2 inches of the root grows above ground.

Nutting's Selected Dwarf Red.—Roots of good or medium size and form; top short; attains to a useful size about the same time as Whyte's Black, but is not nearly so large. Flesh deep red, tender, and of good flavour.

Pine Apple Short-top.—Roots medium-sized, of good shape, and produced almost entirely below ground; top short and compact; colour of flesh deep blood red, approaching black, tender, and rich flavoured; undoubtedly the best-coloured, most tender, and best-flavoured Beet in cultivation. The roots are late in attaining a good size; indeed, in a cold and wet season they do not come to a good size. It keeps well and late. The stock is difficult to obtain true, and the seeds of the true sort are very uncertain in their germination, being mostly indifferently matured.

Dell's Crimson (Dwarf Waterloo).—Roots medium-sized and good, produced for the most part entirely below ground, very little of the root being exposed; hence its value to remain over the winter where sown, not being so liable to injury from frost as varieties having a considerable portion of the root above ground. Top short, of a rich brilliant metallic lustre, dark crimson, compact, uniform in habit and colour; height 1 foot, the leaves gracefully arched or recurved, after the style of a *Dracæna*. Flesh deep red, tender, and of good flavour. It is decidedly a late sort, being the last to have a root large enough for use. In foliage it is the very finest of all the kinds of Beet.

Of the kinds named, Dewar's is to be preferred for its earliness, Pine Apple for colour and quality, and Whyte's for size combined with colour and quality; and if I were asked which is the best, I should say Pine Apple. It must, however, have high cultivation, and so must all vegetables to be good.—G. ABBEY.

STRAY NOTES ON THE ROSE.

A CORRESPONDENT of the Journal has asked for information regarding the qualities as a show Rose of Perfection de Lyon, which the Rev. W. F. Radclyffe believes to be the best show Rose of all. I obtained several plants in consequence of his recommendation, and found them most vigorous growers, abundant bloomers, and of exquisite shape, but, alas! this Rose, unless caught at once, its beauty of colour and shape is gone. One should have a very large supply to succeed in showing it in its full beauty. Its colour, too, is not such as will ever admit of its attracting much attention in a show box. Indeed, it was very poorly, and in only a few instances, exhibited at the Grand International Rose Show at Dublin. On interrogating some of the nurserymen exhibitors they designated it a very capricious Rose.

Having relinquished all hope of succeeding in growing Marie Baumann by ordinary out-of-door cultivation, I had some plants of it carefully protected from wet and frost during winter and spring; the result this season was a continuous production of most brilliant flowers, perfect in petals, durable in colour for several days after being cut. In fact, I believe it would be the most prized of all Roses were it not that it is, as far as I have experience, and also have learned from others, totally unsuited to our climate unless with unusual protection. Other plants of it which I had treated according to the usual course died-off in the months of June and July. It was very remarkable how scarce it was at Dublin on the 25th and 26th of July; the best flower I took to be a middling Alfred Colomb, until I was assured by the exhibitor it was Marie Baumann, so unlike was it to the many gorgeous flowers I had myself a month before.

As regards the International Rose Show, I regretted no notice was taken of it by any of the correspondents of the

Journal. It was a feast for the rosarian not soon to be forgotten. Having spent several hours each day taking notes of the grand and varied collections displayed, a few remarks on them, I trust, may not be uninteresting to your readers.

The first prize was awarded, in every class belonging to nurserymen, to Mr. Alexander Dickson, of Newtownards, except the Tea and Noisette. It was rare cultivation indeed that brought the Rose to be exhibited with such enormous trusses, and at the same time with every flower quite full. For my part I shall regret if it should be deemed necessary for perfection to have every Rose as large as Prince of Wales, one of last year's new kinds. The most conspicuous for beauty of outline and brilliancy in this collection were Charles Lefebvre, Pitord, Dr. Andry, Beauty of Waltham, Duc de Wellington, Paul Verdier, Maurice Bernardin, Duc de Rohan, Maréchal Vaillant, Mademoiselle Marie Rady, and Mademoiselle A. Wood. The Messrs. Campbell took the second prize for, I believe, the loveliest stand of sixty ever set up in Dublin of the usual medium size; the most noteworthy was a really beautiful Maréchal Neil. This firm had two of it, and were the only exhibitors of it, also of Madame Vidot and Sophie Coquerelle, both exquisite specimens; Minerve, Alfred Colomb, Madame Charles Crapelet, Dupuy Jamain, and Fisher Holmes.

The Tea and Noisette Roses were wonderfully fine; the best were Adam, David Pradel, Homère, shown in every box, Madame Trifle, Moiret, and Triomphe de Guillot fils. The first prize was deservedly given to Messrs. M. Saunders & Sons, of Cork; the second to Messrs. Campbell & Sons.

The amateurs were as deserving of notice as the nurserymen. I mention the latter only, having taken the list of the most attractive from their larger collections. In the new section of Roses, Louis Van Houtte, La Motte Sanguine, and Louisa Wood, were by far the most beautiful. The unanimous opinion was that Baroness Rothschild was the premier Rose of the Exhibition; it was in every stand, and in every stand first-rate; Charles Lefebvre, the best I have seen it; Dupuy Jamain, dazzling. It was remarked how very few blooms were here of Duke of Edinburgh, and that none of them were what it ought to be. With me this year it has been a perfect failure, as likewise La France. I trust, however, it is only a temporary failure. Miss Ingram was shown very fine, as also Emile Hansburg, and Edward Morren. The general public, I apprehend, are more enamoured of bright colours, and sometimes judges at exhibitions are swayed by a stand's brightness, overlooking others where a great variety of colour prevails, which I should suppose ought to be essential along with brilliancy.

An article on the subject of judging would be highly appreciated by many of your readers, and by none more than by—AN AMATEUR, *South of Ireland.*

THE WALTHAM CROSS GRAPE.

LIKE many more I hope this will prove, as seems likely to be the case, a really good late-keeping Grape; we want such a Grape. Muscats require so much fire heat in order to finish them properly, that in these days of dear coal they are very expensive, and we have no other late white Grape of high quality. White Lady Downe's, though perhaps the best keeper we have, is not superior in flavour to black Lady Downe's. Royal Vineyard cracks. Rasin de Calabre keeps till March, but is very second-rate in quality. The same may be said of all the other white Grapes having pretensions to being late-keepers, such as Syrian, White Nice, &c.

I highly approve of the step taken by the Royal Horticultural Society in sending Mr. Barron to see Mr. Thomson's new Grape the Duke of Buccleuch growing at Clovenfords. Let them do the same in the case of the Waltham Cross Grape. If Mr. Barron can report that he has seen this Grape hanging in good condition next March at Waltham Cross, it will give the Grape-growing public confidence in it and quadruple its sale.—A. M.

EARLY FROSTS.—The frost appears to have been exceptionally severe here (North Hants, along the valley of the Test), and many places only a mile higher up have scarcely felt it. On the morning of the 21st of September we had 3° of frost, which killed the Dahlias, Coleuses, and Vegetable Marrows; on the 22nd 5° of frost; on the 23rd 7°, which quite settled everything in the flower garden but Calceolarias, also late Peas, and Dwarf Kidney Beans. During the seventeen years I have been here we have not before been visited so exception-

ally by early autumn frost. I should like to hear if any other neighbourhood has experienced a similar visitation.—J. A., *Laverstoke*.

ARE SOLANUM CAPSICASTRUM BERRIES POISONOUS?

On examining a frame in which I had placed several pots of *Solanum Capsicastrum* to ripen their berries, I found that numbers of the latter, as well green as ripe, had been eaten off by some animal, and were lying scattered at the base of the pots. The pulp of some of the ripest had evidently been eaten by the same animal. A foot from the pots lay a fine mouse, who had paid with his life the penalty of his depredations. Evidently the berries had poisoned him, and I should be glad to know whether it is a recognised fact that these berries are poisonous. They are very attractive to children.—T. S. FOX SIMPSON.

[The fruits of most of the Solanaceæ are either poisonous or strongly medicinal.—Eps.]

POTATOES DISEASED AND UNDEASED.

As I wished to ascertain which variety of the Potato was best for my own use, I this year grew six different kinds with the results which I shall proceed to state. My Potatoes were grown on a piece of new land consisting of about equal parts of clay and sand, and comprised the following varieties—viz., Racehorse, Early Rose (American), Cambridge Kidney, Red-skinned Flourball, Myatt's Kidney, and the old York Regent. The Racehorse tubers were dug up and eaten before the disease appeared, and were good early Potatoes. Those of the Early Rose were mostly diseased, and such as were not so were so waxy that they could not be used. Cambridge Kidneys were also diseased, but not so badly as the Early Rose; those which were good were of fair quality. The tubers of Red-skinned Flourball were untouched by disease, very large, and of first-class quality; Myatt's Kidneys and York Regents much diseased; those that were good were of fair quality. Of the Red-skinned Flourball I cannot speak too highly, and in future I shall only grow it and the Racehorse.—C. L. SHARMAN, *North Finchley*.

My Potato-ground, about half an acre, slopes to the south, the subsoil is a sandy clay, and on this land I generally beat my neighbours. In dry seasons, when gardens near, which are on "the brash," produce Potatoes only the size of large marbles, I have a large-sized and numerous yield. In damp seasons I have, until this year, in an experience of sixteen, had less disease than most people. I have found that the best plan is to get the Potatoes in as soon as safe from frost, and out of the ground as soon as possible.

I have never, even this year, found Myatt's Kidneys at all diseased, and as they are good eating up till Christmas I grow more and more every year. As these are dug before the latter part of July, and have long before that come to perfection, I think on these accounts they are free from disease, for I have noticed here that in a dry July there is no disease, and the more rain in that month the worse the disease. Next to Myatt's I have always had, but shall never again have, Forty-folds. These were always a little liable to disease, and this year are far the worst of any—indeed the crop was an almost total loss. Next comes always a broad planting of Flukes, usually good, but a poor crop this year—not a fourth of what I usually have, the disease among them being bad, but not so bad as among the Forty-folds.

My last variety is called here Jersey Blue. I first had this sort at the urgent wish of my man, who cultivates eight acres of land, and is a great Potato-grower. They keep well, they do not shoot out until very late, and when other sorts have made long shoots they have made none. To the great delight of my man George his favourite Jersey Blues are but slightly diseased, and have yielded a very fair crop. Thus with me they and Myatt's are much the best. I have made pretty general inquiries, and find that near this place the Forty-folds are the worst and the reddish-coloured Potatoes are the best. The Jersey Blue is reddish blue in colour.—WILTSHIRE RECTOR.

POTATOES comparatively good, and quite free from disease:—Flourball not diseased, but honeycombed; Bovinia; and Ame-

rican Rose. Potatoes very much diseased:—White Lily; Ash-leaf Kidney; and Rednose Kidney.—*Heywood Lodge, Tenby, South Wales*.

THE state of the Potato crop about here is very bad indeed; many of the farmers are ploughing them in, as the crop is not worth taking up. The varieties grown here are Paterson's Victoria, York Regents, White Radicals, Pink-eyed Radicals, Filaros, American Early Rose, and the American Reds. The American Reds, Paterson's Victoria, and American Early Rose are the least diseased. The tubers of the latter, however, become very bad after being taken up. York Regents and Radicals are all gone. Filaros are half gone. The following is a labouring man's Dr. and Cr. account of his Potato crop. Twenty rods of Potato ground, £2 16s. 6d.; seed, £1 10s.—total, £4 6s. 6d. The total produce was three measures of seed! the large ones having all gone bad.—T. J. HARRISON, *Furdon, Cheshire*.

STRAWBERRIES.

THE recent practical notes on Strawberries have induced me to break a long silence. It is now something like six years since, under the signature of "J. T. and Others," I gave a list of the then best Strawberries, particularly for market. I recommended Myatt's Eleanor as the latest Strawberry; and what has peculiarly struck me in the recent articles is, that out of the almost innumerable new sorts there is none later than it, and, if I remember rightly, it was raised upwards of twenty years ago; indeed, the Strawberry season has been lengthened but little, if at all, for few sorts are earlier than Black Prince, which is very old—not that I think earlier sorts than we have would be an advantage, on account of frost, but I do think we may have later Strawberries. As we have none naturally later than, we will say, Eleanor, what is to be done? We can only plant in different aspects. By this means we can have fruit ten days or, perhaps, a fortnight longer than where the plants are all grown in one aspect. Most people will choose a border as a quarter for their Strawberry plot, and plant it with a selection of sorts from the earliest to the latest. So far, so good; but if it is desirable to prolong the season, our only resort is planting in different aspects. If we want a few Strawberries very early we naturally plant in the earliest situation, say in a south border; why not plant some in our north borders for the latest? Of course, in each instance the earliest and latest varieties should respectively be planted.

Again, when Strawberries are planted in a quarter, instead of having the ground with one aspect, say south, why not throw it up in ridges like the roof of a house, so as to have at once a south and a north aspect, thus— $\Lambda\Lambda$? This is easily done by marking out the ground, say in 20-feet beds running east and west; then fix a stake halfway along the end of each bed, tie the line to each stake at 2 feet or 2 feet 6 inches from the surface of the ground as may be wished, and throw up the soil right and left of the line until the desired slopes are formed. The ridge should be well trodden as the work proceeds. Next give a good coat of manure, and the bottom of each slope, if the soil is not over-deep, should be subsoiled, and, if necessary, some of the soil must be replaced by good fertile loam. If the soil is light, like Mr. Douglas's, it would be well to make the slopes of new soil, and I would not wish for anything better than that from our roadsides. This, laid up for a season, would grow Strawberries in situations that have been thought altogether unfit for the purpose. Plant the north side of the beds with Eleanor, Frogmore Pine, Elton, &c., and the south side with the early sorts, such as Black Prince, Alice Maude, and Vicomtesse Hélicart de Thury, and it is as well, perhaps, to leave a flat piece of ground for midseason sorts.

I have not been growing many varieties of late, but three years since I had a few, to me new. They included Dr. Hogg, which in this cold late situation I find a very poor cropper, but the berries produced are undoubtedly good; Mr. Radclyffe, much in the same way, but a little better cropper; Wonderful, with me good for nothing, plenty of berries, but small and bad-flavoured as a rule, and, worst of all, the greater part of them rot before they are ripe. This is a great trouble with almost all sorts; hence, as I have recommended before, the desirability of growing them on the Potato-like ridges to give them more sun and air. This rotting begins with a little round spot, often near the footstalk, and if eaten when so affected the berries have a most disagreeable taste. John

Powell appears to be a tolerably good Strawberry; but the cream of the lot I had is Lucas, an excellent cropper, with fine fruit, of good flavour, and continuing a long time in bearing. Cockscorn is the next best in all respects, perhaps not such a profuse bearer, still the fruit is somewhat larger, and has a delicious Queen flavour, whilst Lucas partakes more of the Pine flavour. Of Prince of Wales, procured at the same time, I have not seen enough to say whether it is worth keeping or not. It will be seen that out of six varieties I only find two worth retaining—viz., Lucas and Cockscorn.

I may add that I planted at the same time British Queen, which has greatly disappointed me. Like Dr. Hogg, it has produced no fruit worthy of mention. It is evident that British Queen and its kindred do not like this soil, although it is cold and retentive. Possibly it is partly owing to our having so much rain as well, for being in the neighbourhood of the hills that the watery clouds of the Atlantic Ocean first encounter, we get more than our share of rain. I can again speak in the highest terms of Black Bess; although a great number of its early blossoms were killed, and others partially so produced deformed fruit, I had a very fair crop, some berries very fine towards the end of the season, which enabled me easily to carry off first and second prizes in an open class. This kind produces as fine fruit at the last as at the first, which few varieties do. It is what is termed a second early, but we gather from it almost the latest.

Before closing this note I wish again to notice that many of the older sorts are not superseded; for instance, the first-prize Strawberry at the Royal Horticultural Show at Birmingham was Kitley's Goliath. It was certainly a fine dish, but in my opinion this Strawberry is poor eating, still it has a good appearance, and is a good cropper. The second prize, I think, was carried off by Sir Charles Napier. Again, this is indifferent in flavour—too acid. The third, after these two old varieties, was Dr. Hogg. Where were all the rest of the young recruits?—J. T., *Maesgwynne, Whitland, S. Wales.*

THE POTATO DISEASE.

THE stormy weather, and warm humid air of the present season, have been peculiarly favourable to all fungoid growths; therefore, as might have been expected, the Potato disease has been more than ever prevalent and destructive. Accounts reach us on all sides of the serious failure, or even total destruction, of the Potato crops from the ravages of this insidious pest. How and when it was first observed, what it is, and how to extirpate it, are the three very serious questions which have occupied the attention of scientific men for nearly thirty years. The two first questions can now be pretty satisfactorily answered; but as for the third, it is an enigma which has at present baffled every attempt at solution.

A brief summary of what is known of the Potato disease, with a new series of illustrations drawn to a uniform scale, cannot fail to be of interest to all readers of "Science-Gossip;" and in writing this summary, and engraving these illustrations, I am bound at once to disclaim all originality, and to say that for nearly all the facts known respecting the Potato disease we are in the main indebted to the careful and accurate observations of the Rev. M. J. Berkeley. These observations, with those of Dr. Montagne, Dr. Payen, De Bary, and others, are spread over the literature of the last quarter of a century, and as their perfect accuracy has now been confirmed by microscopists in every direction, little more can be done than to present these observations in their proper sequence and entirety. Therefore, it must be understood that I am briefly recording what I have seen of the Potato disease, after being told what to look for, and how to see and understand it, by Berkeley and other of our foremost scientific writers.

The autumn of 1845 will be ever memorable as marking the great outburst of the Potato murrain over the whole of Western Europe and the northern parts of the United States of America; the disease had, however, been very bad the previous year in America, and was even observed in Europe, and reported upon in that year by Desmazières, who read a paper upon it at Lille. Even in 1841 Dr. Morren detected it in Belgium, and then and there published a notice of the fungus, and some suggestions for contending against it, such as immediately removing the diseased haulm, &c. But even so far back as 1830 a disease of Potatoes was observed in Germany, and called the "dry-rot;" and it is very probable that the first detection of the Potato disease dates back for nearly a century. One year before its virulence reached its height in

this country—viz., 1844, it occurred in its worst form in Canada, and a letter addressed to Dr. Bellingham in that year, and published in *Saunders's News Letter*, gives a graphic account of its ravages. The letter says:—"During the months of July and August we had repeated and heavy showers, with oppressive heat, and an atmosphere strongly charged with electricity. Towards the close of the month of August I observed the leaves to be marked with black spots, as if ink had been sprinkled over them. They began to wither, emitting a peculiar offensive odour; and before a fortnight, the field, which had been singularly luxuriant, and almost rank, became arid and dried-up, as if by a severe frost. I had the Potatoes dug-out during the month of September, when about two-thirds were either positively rotten, partially decayed, and swarming with worms, or spotted with brownish-coloured patches, resembling flesh that had been frost-bitten. These parts were soft to the touch, and upon the decayed Potatoes I observed a whitish substance like mould." From careful consideration of the earliest recorded cases of this disease, there can be little doubt of its American origin, or, indeed, from its dating back from a very early period. A superficial thinker might be inclined to fall back upon the theory of "spontaneous generation," and so account for the origin of the Potato fungus about 1840; but although *Peronospora infestans* belongs to a genus numbering some forty species, all more or less alike, and all parasitic upon living plants, yet the specific

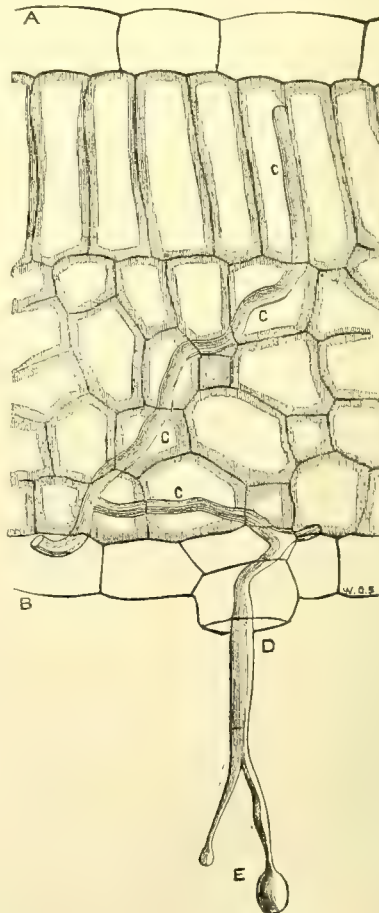


Fig. 1.—*Peronospora infestans*. Five days' growth from a spore, enlarged four hundred diameters.

characters of *P. infestans* appear so distinct (such as in the peculiar swellings on the thread-like stems, &c.), that no observer of natural objects accustomed to distinguish one thing from another, could for a moment think of considering *P. infestans* as a mere form of some immediate ally. Its real origin, like the origin of all plants, animals, diseases, &c., probably dates into the far past, and is likely to be ever involved in obscurity. Nothing is so difficult (or even im-

possible), as to trace things to a beginning: this has often been attempted in regard to the diseases with which man is affected, but with little success; no one can tell how or from whence scarlet and typhus fever and other ailments really originated. Epidemic cholera is said to have originated in the delta of the Ganges in 1817; but it seems highly probable (if this or anything else ever had a beginning), that, if a searching investigation were made, its real origin would date from remote antiquity.

It is not generally known that the fungus which produces the Potato disease is by no means confined to Potatoes, but attacks other members of the family to which the Potato belongs; for instance, it is very common on the fruit of the Tomato, and has been detected on the common Woody Nightshade, or Bitter-sweet of our hedges (*Solanum Dulcamara*); it even does not confine itself to the family to which the Potato belongs (*Solanaceæ*), but has been found upon *Anthocoris viscosa*, a member of the *Scrophulariaceæ*; therefore, in searching into the "origin" of *Peronospora infestans*, we not only have to look to the beginning of the Potato disease itself, but to the diseases of such plants as the Woody Nightshade and Tomato. Little was known of the disease as affecting Potatoes in this country till July, 1845, when it ravaged the south of England, the first printed record of its alarming advent appearing in a letter from Dr. Salter, in the *Gardeners' Chronicle* for August 16. So rapid and devastating now was its progress in this country, that Mr. Berkeley states few sound Potatoes were to be found in Covent Garden Market a fortnight after its first recorded appearance, and though at this time it had not reached the midland counties, yet in a few days it was general. At the beginning of September it was recorded from Ireland, and a few days afterwards from Scotland, at which time the full power of the Potato murrain was expending itself upon the British isles. About this period (as now) the leading newspapers teemed with balderdash and the most alarming, absurd, and contradictory accounts, some writers attributing the disease to an epidemic resembling cholera; others to animal manure used in cultivation, to microscopic insects, railways, or electric influences; whilst some person asserted it was a sign of the break-down of the Potato plant from over-cultivation; or that it was caused by the tubers being cut in pieces before planting. All the papers, grave or gay, had something to say about it, and the Potato disease was even one of the stock subjects reserved to joke about in the Christmas pantomimes. On one stage a gigantic tuber was brought on surmounted by an equally gigantic aphid, a joking allusion being at the same time made to the *Aphis vast-tater*. So serious, indeed, was the state of things at this period, that three of the governments of Europe issued commissions to examine into the cause of the murrain, and discover, if possible, the remedy. It has frequently been remarked, that just before a bad attack of the disease, the leaves and stems of the Potato become a darker green and appear more than usually luxuriant, as stated in the letter addressed to Dr. Bellingham above quoted. This has been accounted for from the fact that the mycelium of fungi is a great incentive to the production of the green colouring matter of leaves; we may, therefore, safely assume that this appearance is put on immediately after the germination of the spores upon the foliage and stems. So rapid is the growth of this parasite, that in four or five days after this germination the tissues of the leaves become traversed in every direction by the mycelial threads, and the fruit-bearing branches are protruded through the breathing-pores on the under side of the leaves, as shown in *fig. 1*. The parasite never appears on the upper surface, which is impervious to its attacks; but in perfecting itself, and producing its abundant fruit, it totally destroys the matrix on which it grows, and causes the leaves to putrefy and dry up. Perfect specimens are seldom met with on Potato stems; but the destructive mycelial threads descend them, and so reach the tuber. The stem now, like the leaves, rapidly rots, and falls upon the earth an offensive mass. So rapid and fatal is the growth of this fungus, that in a few days it will spread from plant to plant over a large tract, and in less than a week turn every stem and leaf in the field to one rotten mass. Within these diseased stems are often found black masses of hardened threads, which are believed to be the mycelial filaments, in a resting and highly condensed, but still living state: these black threads have been described under the name of *Sclerotium varium*. Another form of this substance, very common just under the bark of old trees, has been described under the name of *Rhizomorpha*; this is probably the mycelium of some

Polyporus in a high state of condensation: similar threads have also been found on the woodwork of old coffins. Returning to the young condition of the Potato fungus, we see it five days old in *fig. 1*, where the distance from A to B shows the thickness of the Potato leaf itself, magnified four hundred diameters: A is the upper surface of the leaf, and B the lower. The mycelial threads or spawn, C, may be seen ramifying amongst the cellular tissue of the leaf, whilst the fertile thread is shown emerging through a breathing-pore, or stoma, D, and branching and bearing (at present) immature spores at E.



Fig. 2.—*Peronospora infestans*, enlarged 150 diameters.

It is almost impossible to conceive of anything which could have a more damaging effect upon a plant than such a growth as this; for, leaving out the destructive nature of the mycelium within the leaf, the whole of the leaves' mouths, or breathing-pores, soon become completely choked-up. It is somewhat analogous with a bad attack of croup in the human subject, with the addition of an external growth. *Fig. 2* represents the mature condition of the fungus enlarged to 150 diameters only: here the characteristic swellings on the branched threads are shown, the stems bearing an abundance of spores (which are analogous with seeds, and reproduce the parent), on their apices; the threads, as in the last figure, are seen emerging through a breathing-pore on the lower surface (here inverted, better to display the character of the fungus).—WORTHINGTON G. SMITH, F.L.S. (in *Hardwicke's Science-Gossip*.)

(To be continued.)

POTATOES FROM THE CONTINENT.—During the past week there have been very large importations of Potatoes from France, Belgium, and Holland at Great Grimsby. The Potatoes are packed in bags, weighing eight stones, and meet with a ready sale at 7s. 6d., a-bag from local dealers. There are no symptoms of disease among them, and the importation has been not less than 200,000 pecks during the past week. Preference was given to the Potatoes brought by the *City of Ghent* from Ghent,

which landed 2031 bags on her last voyage. The French boats are bringing in full cargoes of sound Potatoes, which meet with ready purchasers at 14d. per peck.

REPOTTING SHOW AND FANCY PELARGONIUMS.

In repotting plants which have been pruned back and are breaking, after removing most of the old soil they are either transferred to pots of the same size as those which they previously occupied, or, more generally, to pots of a smaller size, and again potted when well established, as free fresh rooting is desirable. I use the compost lighter than for the final pottings. Thus, to three parts of fibrous loam inclined to be light, I would add one part of rotten dung or leaf mould, well dried, and exposed to the air previous to use. If the loam does not contain much grit add one part of silver sand, and less if the loam is sandy and gritty. Add nearly one part of small charcoal, say from the size of small shot up to peas, and even as large in some cases as Mazagan beans. The smaller size of the charcoal lumps will be no disadvantage provided the mere dust is excluded, and that dust will be useful for cuttings, and for top-dressing cuttings in winter. Such a soil will suit all the large-flowering Pelargoniums. The more tender Fancies will be the better of nearly one part of heath soil, well broken, being added to the compost.

Much will depend on the sweetness of the compost, having it neither too wet nor too dry. Perhaps most injury is done in potting by using soil too dry, it is so difficult to water it thoroughly afterwards. Any soil for potting that by squeezing a handful it will retain the trace of the finger, and can be laid on the potting-bench as if it were moulded, without any signs of falling to pieces, is too wet. If the soil will not retain the traces of the fingers when firmly pressed, it is too dry. It is difficult to prevent those who pot from using soil or compost too dry.

Where pots must stand on soil, sand, &c., the mode of drainage is important. Generally, broken pots are used for the purpose. Place the first large piece over the hole, with its rounded side downwards, and the smallest worm will not get in, and yet the water will escape freely enough if there are other smaller pieces laid loosely over the first, or fine washed gravel surmounted with a pinch of fresh moss just to keep the soil out of the drainage. The simple plan of placing the convex side, and not the concave side, over the hole will thus be an advantage. Of course, it would be different if people went to the expense of tin or zinc caps to fit tightly over the hole. However nicely these or the convex side of a crock cover the hole, the water will escape easily enough if there is smaller drainage for from half an inch to an inch above the main hole-covering piece.—R. F.

DEPRESSING THE BRANCHES OF FRUIT TREES.

THE origin of this practice is lost in the darkness of antiquity, and it is likely that even those who put it in force for the first time had no real claim to the merit of the discovery, as they did in this but copy what goes on in fruit trees left to themselves, as, for example, those of the orchard. It is, in fact, quite clear to an observer, that the branches which compose the head of these trees lengthen-out, at first following a vertical line, and in course of time become covered with shoots, particularly in the portions more exposed to light on the outside. The weight of these shoots acting upon the chief branches causes them to bend gradually downwards, in consequence of which the circulation of the sap being affected and the strength of the branches impaired, these latter finish-up by putting out a crop of flower-buds. The weight of the fruit still further increases the depression, and either from this successive lowering or from the larger bulk of fruit they are forced to maintain, the vigour of the branches by degrees grows less and less. It is only with great trouble and by following a course other than that ordained by Nature that the sap at last reaches the old branches, where, being compelled to expend the whole of its force, young and healthy shoots can be seen springing forth under its influence, and elongating in an upward direction over those already bent below. These new branches appropriate nearly all the sap of the tree, and the old ones, sinking more and more, end their existence by drying completely up. It is not long, however, before these new branches begin to

undergo the displacement to which their predecessors were subjected, and then ultimately experience the same fate, dying out and making room for a new generation of vigorous shoots. This continuous development proceeds until the period when the tree has no longer a sufficient supply of sap at its disposal, and it then begins to show signs of coming decease. From what we have said, therefore, it would appear that those who put this practice in execution for the first time did but take a hint from Nature's teaching, in the same way as we have done in a good number of our cultural operations, such as inarching, layering, and propagation by cuttings. The artificial enforcement of the principle explained above, however, has often given rise to such lamentable results, that people would now deny the truth of the usefulness of this depression of the branches even in some special cases. It possesses a genuine utility in the following circumstances:—

In causing the formation of flower-buds on Pear trees, the extreme sapfulness of which in a great measure hinders the production of a fruitful condition. The flower-buds are only produced at the extremities of the branches, where the action of the sap is less intense. As the depression of the branches tends to impede the onflow of the sap in too great quantity, it is conceivable that the practice thereof is favourable to the process of fructification. But one should be careful not to lower the branches beyond a certain point, or else a risk of overdoing the thing is incurred, when, in consequence of the sap not flowing to the depressed part in sufficient amount, the flower-buds are unable to form, and, besides, over-luxuriant shoots will spring with too great vigour from the bottom of these depressed branches, and soon succeed in putting an end to their existence. We think, also, that the degree of depression should not be always the same, for, as the object of the practice is merely to check the extravagant supply of sappy matter which would spoil the fruiting of the branches, these ought to be gently raised in proportion as they become less overcharged. The lowering of the branches more than 10° below the horizontal, which is recommended in such an absolute manner by some, seems to us to exceed reasonable bounds, and is the chief reason of the many failures which have nearly everywhere followed the application of the same, although an additional cause may be the unchecked development of numerous exhausting buds that take their origin at the point where the branches begin to curve. These buds should be removed whilst yet young by a severe exercise of pinching, though even at the danger of seeing the branch soon sink under it. Finally, the same reason forbids that too large a number of fruits should be left on the branches so treated for fear of their producing ultimate exhaustion. As regards making choice between the curve and the straight line at the time of depressing the branches, little can be said. If it is well done satisfactory results can be obtained as well by one way as the other, but the following reasons induce us to advocate the curve. The depressed branch does not make such an acute angle with the stem as in the other case, and, consequently, there is less resistance to the passage of the sap from the stem to the branch, and a less vigorous production of sap-appropriating buds. On the other hand, the branch is less likely to be broken when trained in a straight line.

It also possesses a genuine utility in promoting fruit-bearing, and in securing the development of conveniently-situated succession shoots upon Vines subjected to the long-pruning system. The fruiting nature of the Vine is totally different from that of other kinds of fruit trees, as the flowers are produced from shoots of the same year, and as all the leaf-buds of the young branches are capable of being transformed into fruit-bearing shoots; whence it follows the more plentiful the buds upon a young branch are, the greater will be the produce therefrom. But if the young branch is fixed in a vertical position, the shoots arising from it will be less numerous than if it were more or less a little depressed. As to the degree of depression, it ought to exceed a little that which suits other fruit trees, for the Vine is a plant very prolific of shoots, and on this account is less affected by an alteration in the arrangement of its branches. They can, therefore, be carried some 12° below the horizontal.

But the depression of the fruit-bearing shoots of the Vine is also practised with a view to another not less important object. It is, in fact, necessary to make a new fruit-bearing shoot come into existence every year in order to take the place of that of the year before, and to effect this so that the new shoot may resemble old wood as nearly as possible in constitution. Now, by depressing the fruit-bearing shoot of one

year to a proper extent, the appearance of a strong bud at the base, which will bring about the object of which we have just spoken, is induced.

It possesses a genuine utility in encouraging the development of succession shoots on the Peach tree subjected to the system of long pruning. The fruit-bearing properties of stone-fruit trees, and particularly the Peach, are of such a nature that the flowers appear upon the branches produced the previous year, and that each branch is unable to bring forth fruit directly more than once. It is important, then, as in the case of all our fruit trees, that the new fruit branches should be produced as near as possible to the branches of the framework. But if, after the winter pruning of the branches, they are allowed to assume a direction approaching the vertical, it is plain that the wood-producing buds are especially borne at the top, and these expand themselves to the hurt of those at the base, which, however, are also essential. To compel the appearance of the latter, the fruit branches must be submitted to winter training, which tends to cause the sap to act with greater force on the base of the branches than at the top. For this purpose the fruit branches situated on each side of the branches of the framework, and which prolong themselves vertically, are depressed to a horizontal direction. As for those upon the oblique and horizontal branches, the same result is obtained by bending them towards their base, so as to train them in a line almost parallel with the branch which bears them.

It possesses genuine utility in establishing the balance of the vegetation of a tree. It is well known how very important it is that the vegetative power be equally distributed throughout the various portions of pruned trees, to avoid the danger of the early death of some of the feeblest branches. Now, among the numerous ways that are capable of being employed for lessening the strength of certain branches to the advantage of those to which the sap does not flow freely, one of the most effectual is the depression of the too flourishing shoots, which must be regulated according to the degree of exhaustion wished to be induced. The depressed branch should be carried in a straight line, or else it remains distorted, and shoots springing from the curve draw to themselves the sap intended to promote the growth of other branches.—A. DU BREUIL (*in Revue Horticole*).

TAYLOR'S COMBINED WARMING, VENTILATING, AND VAPORISING PIPES.

In noticing the garden structures and implements exhibited at the Royal Horticultural Society's Birmingham Exhibition, our reporter, in commenting on Mr. Howitt's house which was

the ordinary hot-water pipes, cast on the pipes. This is covered with a zinc cover, and a zinc pipe communicating with the outer air is bent into the cover at one end, the farther end of the cover being left open for the air to escape into the house after passing over the length of heated water in the evaporating-pan, from which it would receive both heat and moisture. For forcing houses and stoves this method of ventilating and vaporising must be very beneficial, especially in winter time. It would be very valuable, too, in propagating-pits." We have now, through the kindness of Mr. Taylor, the pleasure of giving illustrations of the pipes employed. *Fig. 1* shows the connecting tube for conducting the outer air into the air-chamber of the pipe; while *fig. 2* is a transverse section of the pipe and chamber.

THE ANGULAR DIVERGENCE IN THE BRANCHES OF PLANTS.

SOME grow quite prostrate, and others, though closely allied species, might be strictly erect. Late in the autumn we may note plants with prostrate leaves or branches, which in spring will have them of a sharp upright angle. The *Verbascums*, especially *Verbascum Blattaria*, had their root leaves so firmly pressed against the ground, that on lifting they would fall back with a spring; as soon as the central axis grew, the leaves from that would be almost upright. In some respects, erection or prostration became almost specific characters. The *Rubus villosus* usually grew erect even from infancy, and the *Rubus canadensis* generally trailed; yet the last-named would sometimes throw up strong erect stems, which could scarcely be distinguished in that stage from *R. villosus*. Again, the same species of tree would often produce individuals quite erect; and at other times very pendant, and hence we had in horticulture the class of weeping trees. All trees seemed to have this power of producing pendant individuals. The Oaks, Ashes, Poplars, Elms, all furnished familiar examples.

It was usual with botanists to pass these things over as "weaknesses." But the term weakness explained nothing. To say that these plants had lost the power of erection was simply restating the primary fact. Moreover, some of these prostrate forms had apparently more vigour than the erect ones. *Rubus canadensis* was weaker than *R. villosus*, truly; but, on the other hand, some of the Russian trailing *Junipers* were far more vigorous than any of the upright forms. The Weeping Beech also was in appearance more vigorous than the ordinary forms. All Beeches had their young growth pendant. As the growth matured, the branches became erect; but in the weeping form erection did not come with maturity, and hence it remained pendant. In the Ashes, however, there was no

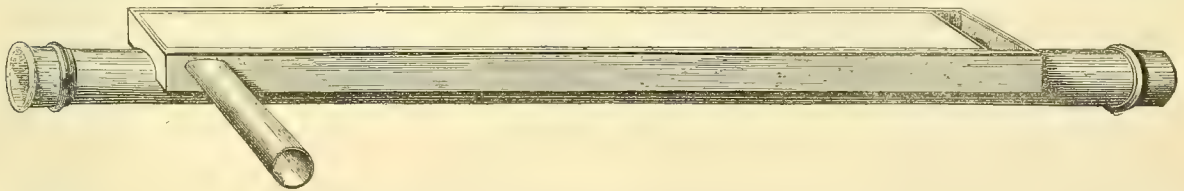


Fig. 1.

awarded the gold medal there, remarked, "Mr. Howitt's house was fitted-up with pipes with ventilating and vaporising

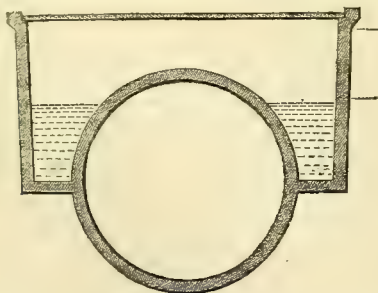


Fig. 2.

pendency in the young growth; but the Weeping Ash was one of the most decided of all drooping trees. In such cases as these, the law which governed the angles of divergence must either be different in each case, or operate at different stages of the development of the branches.

Mr. Meehan, in his late travels in the Rocky Mountains, came on a tract covered profusely with one of the small creeping *Euphorbias*, probably *E. cordata*, in which a large quantity grew perfectly erect. Sometimes only a portion of the plant exhibited this character, at other times all the plant was upright. The specimens he exhibited were of the erect class. In all these cases the plant was attacked by a small fungus, *Æcidium Euphorbiæ* (*hypericæfolia* of Schweinitz). He thought that the fact that this little fungus should be able to make a usually creeping plant, rooting from every joint, entirely lose this character and become erect, was worthy of some notice by students in this branch of botany.—T. MEEHAN.—(*Proceedings of the Academy of Natural Sciences, Philadelphia*).

troughs, invented by Mr. Taylor, Walton Villa, Aylesbury, Bucks. The system is to have a trough to contain water over

DESTROYING SCALE.—*LAPAGERIA ROSEA*.—At page 262, "L." tells us he has found out an easy method of killing scale; I

have no doubt whatever of its being both easy and effective, but it would be a most tedious one, particularly if there were a large collection badly infested. I could cleanse as many plants of scale in five minutes by syringing them with Clarke's insect destroyer as a man could do in a week with a hair pencil. Time is money. I congratulate him respecting his

Lapageria. I have one planted out in the way he describes, and a most splendid plant it is, at the present time all laden with flowers. This plant is also subject to scale, and it would be more difficult to free it from scale than the Camellias. A good syringing with the insect solution would also cleanse it from scale and every other insect.—A CONSTANT READER.

PEASGOOD'S NONESUCH APPLE.

THIS handsome Apple was presented before the Fruit Committee of the Royal Horticultural Society on September 18th, and received a first-class certificate. It was raised by Mr. Peasgood, of Stamford, and is one of the most handsome autumn Apples in cultivation.

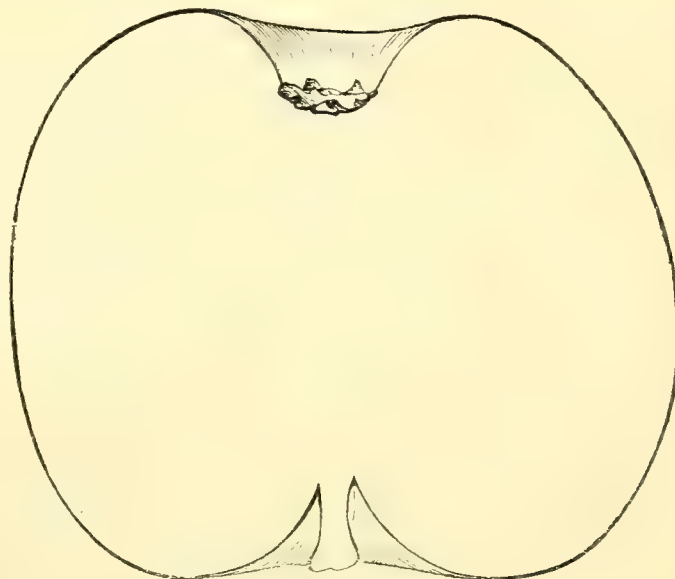
The fruit is like a very large Nonesuch, and not unlike a well-grown and highly coloured Blenheim Pippin. It is above the medium size, roundish, and somewhat oblate. The skin is yellow, overspread on the sunny side with red, which is copiously streaked with dark crimson streaks. The eye is very large and open, set in a deep, round, and even basin, and with short depauperated segments. Stalk short, deeply inserted. Flesh yellowish, tender, very juicy, with a sweet and sprightly flavour and pleasant aroma.

It is a valuable culinary Apple, and not unworthy of the dessert.

As an opinion had been expressed at the meeting of the Fruit Committee that this Apple too closely resembled the Blenheim Pippin to warrant its being considered distinct, we wrote to Mr. Laxton, of Stamford, whose opinion on such matters we believe no one would doubt, and his reply is—"I had not either seen or heard of Mr. Peasgood's Apple until I saw him staging them at our recent show, when I, and also

Mr. Gilbert, of Burghley, at first sight took them for Blenheim. Upon further comparison, however, we were both satisfied they

were not Blenheims; and on inquiring of Mr. Peasgood, who is a respectable tradesman and town councillor, he gave me such an account at once as satisfied me that a seedling had been raised by his wife, who came from Grantham, and my only doubt was whether by accident a grafted tree could have been substituted for it. Accordingly I asked Mr. Peasgood, in whose garden I had never been, to allow me to see the tree, which I examined carefully below the ground line as well as above, and being quite satisfied that it was a seedling, I recommended him to send a specimen to the Fruit Committee. Mr. W. Ingram, of Belvoir, was one of the judges, and I believe he and many others acquainted



Peasgood's Nonesuch.

ed with Apples were satisfied that it was distinct; and I do not believe, from the result of my inquiries of Mr. Peasgood, that any accident or otherwise could have caused a change of the seedling for a grafted stock, as the tree seems to have been especially fostered by Mr. Peasgood. There is a remarkable parallel between the circumstances attending the raising of this variety and the Stamford Pippin by myself, both being from pips sown by children in pots, and saved and selected as being the most vigorous in each batch of seedlings."

LUTON HOO,

THE RESIDENCE OF J. SHAW LEIGH, ESQ.

THE name of this estate is purely Anglo-Saxon. Lee Lanton signified "the town by the water," and in succeeding records it was contracted into Luyton and Luton. Hoo meant a high place: so that literally the name is "the high place near the town by the water."

Robert de Hoo was a man of high mark in the reign of Canute, and was buried in Luton church; and his descendants retained it until the time of Henry VI., who raised its then possessor, Sir Thomas Hoo, to the peerage as Baron Hoo and Hastings. His estates seem to have passed by marriage or by purchase to Lord Wenlock, who fell at the battle of Tewkesbury fighting for Henry VI.; and the victor, Edward IV., granted this estate to Rotherham, Archbishop of York, whose eldest son, John, resided here. From the Rotherams it passed to Thomas Crawley, who died in 1629; and from him to his son Sir Francis Crawley, Kt., a Judge of the Common Pleas, who died in 1649, and to his son Francis Crawley, a Baron of the Exchequer, who died in 1682. From him it was purchased by Sir John Napier, a descendant from the Scottish Earls of Lenox; and from the Napiers it passed to the Marquis of Bute's family, from whom it was purchased by the present proprietor.

Luton Hoo was in a great measure rebuilt by Sir Theophilus

Napier its possessor in 1790. The seat of the Rotherams is now a farm house called Forleigh.

TIME is necessary to give dignity to a place by enabling the trees to attain the dimensions and stamp of age, which neither money nor skill can give, and at Luton Hoo the park and domain are furnished with trees of the noblest kinds in great abundance. There is all that is necessary for the dignity of a fine country house. I am not sure how long it was in the family of the Marquis of Bute prior to the fire which, in a great measure, destroyed it, but I believe it was one of the favourite seats of a late Marquis, who sold it after the fire. The present possessor has done so much to embellish it naturally, and has shown such an example of successful farming, that the farmyard at Luton Hoo is one of those sights which one may go a long distance to see. The garden, too, is not without its interest. But let us first note the appearance of the park as we enter it from the Luton side.

The town of Luton lies in a valley just within the county of Beds, and one of the old roads to London through St. Albans also passed through Luton; and following this road from the latter town in the direction of London for less than a mile we come to the lodge entrance of Luton Park. Entering,

we soon find we are in a park of no ordinary attractions. The carriage road proceeds about midway along the face of a slope of which the right or upper side rises gently for a considerable distance, and is well clothed with trees in groups and planted singly, while the ground on the left descends as gently to a valley where there is a fine piece of ornamental water of such length that as we proceed we lose sight of both ends. The opposite side is wooded to the water's edge, concealing in a great measure the corn fields and farm ground beyond. The park is of great size; I believe the drive from the lodge to the mansion is fully a mile long in this direction, and is about as long on the other side. Although the greatest inclination of the ground is towards this piece of water, it is not without undulation in other directions as well, for the carriage road in its course has more than one descent and rise.

A gentle curve of the drive to the right, ascending at the same time, brings us to the mansion, which is situated on somewhat high ground, or rather on a piece of table land, which slopes gently away on the north side, the carriage entrance being open to the park on the other side. The mansion is a fine stone-built edifice (see accompanying illustration), sufficiently embellished outwardly without being too much so, a fault we now and then see. The offices are attached to it on the north side, and on the east a large breadth of dressed ground is connected with it; but what may appear strange to your gardening readers is, that there is no flower garden. As the position of the mansion with respect to its other surroundings does not afford room for a flower garden close to the house, the proprietor, rightly or wrongly I will not pretend to say, determined not to have



Luton Hoo.

one; but if scarlet Geraniums and the like be neglected, trees and shrubs of value and importance are not, and some fine Cedars of Lebanon of great size adorn the grounds, to which are added other choice Conifers. I noticed several fenced round in the park, and they will, doubtless, form a feature there in course of time. The irregular incline of the dressed ground, intersected as it is by walks, is also pretty. But there cannot be a doubt that there is a certain baldness on the south side of this north front. The immense expanse of lawn, without a tree or shrub to break the monotony, is objectionable, and I am glad to find from Mr. Budd, who, I am pleased to see, has succeeded to the management of this important place, that Mr. Leigh, whose devotion to horticulture and appreciation of landscape scenery are worthy of imitation, has decided upon introducing masses of shrubs and single trees, which will effectually remedy all defects of this nature. The further improvements which, by Mrs. Leigh's suggestions, and the co-operation of Mr. Budd's practised experience in these matters, are to be carried out, will when completed make the pleasure grounds of Luton Hoo among the most attractive and beautiful of any in the country.

The kitchen garden and forcing houses are at some little distance from the mansion, being close to the farm buildings—not a bad place for a kitchen garden, as the dung in the yards is accessible; but here the whole assumed the character of a village, a walled-in garden forming the back to a set of offices, with an excellent gardener's house. The garden is large, and

capable of supplying a numerous family. Outside the house one could see that flowers were not altogether ignored, for there were some good examples of ribbon borders, and there was no lack of floral novelties. In walking round the kitchen garden I noticed by the side of one of the walks a row of young Apple or Pear trees, intended to be inarched into each other in cordon fashion; while on the walls and against espaliers were good crops of fruit for the year, and good vegetables in the central quarters. Amongst the latter was a large breadth of Onions, producing as good a crop as I have usually seen in the best of seasons. I remarked this to a friend, when he replied that we were in Bedfordshire, the noted home of the Onion. Being anxious to see a little of the farm buildings, I was reluctantly obliged to leave the garden, and being introduced to Mr. Ross, the steward, the few minutes left of daylight were devoted to a very hasty survey of this wonderful place.

The farm buildings at Luton Hoo present one of the most substantial features of the kind to be met with, occupying several acres I believe; and Mr. Ross, to whose extreme kindness I owe what information I am able to give about them, says there are as many as five steam engines, fixed and moveable, besides from forty to fifty working horses. In the stack-yard I counted ten stacks of hay, all full-sized ones. The corn was stacked in the field. The buildings, such as the cattle-sheds, stables, &c., were arranged like the streets of a town, and the roads better than most towns are, not with Hertfordshire flints, but with granite, as in London and other

large towns; the traffic not being, of course, so great, they had the appearance of being newly laid down. There were all the latest improvements in tramways to run cattle food from place to place, as well as the same arrangement to draw out the hog-troughs, &c., besides several other contrivances not met with elsewhere, devised by Mr. Leigh or his agent Mr. Ross, who seemed to be perfectly at home in the most minute details of the working of the whole. Everything appeared in good order, and if I had been able to visit the fields I have no doubt that the same observation would hold good regarding them. Such a large place, of course, cannot be carried on without corresponding expenditure, but, as Mr. Ross justly observed, if good farming would not pay, had never could; and as an instance of the liberal way in which things are done here, I was told that several railway truckloads of dung were received from London per week. The whole of the hay, straw, and green crops of the farm are consumed on the spot. The crops of corn and the return from sheep were good; and I have no doubt but on the whole a satisfactory result is obtained, taking into consideration the improved conditions of the land, as well as the example shown of what can be done.—J. ROBSON.

NOTES AND GLEANINGS.

THERE is every probability that the ROYAL HORTICULTURAL SOCIETY will hold its PROVINCIAL SHOW at BATH in 1873. One of the Society's officials is to be there next week to select ground, before a public meeting, which is to take place in ten or fourteen days' time. The land is so steep that therein will be the difficulty of finding a large area available for tents, &c.

Our correspondent the Rev. C. P. Peach, Appleton-le-Street, Malton, Yorkshire, writes in reference to the STRAWBERRY ELECTION, to say he has had three lists of Strawberries sent him, and wishes to have some more before making up the ballot list, though, as a conservative, he prefers open voting, and will forward for publication any remarks likely to be of general interest, as some of those he has already received most assuredly are.

From the *American Agriculturist* we find that Mr. CHARLES S. SARGENT has been appointed Professor of Horticulture in Bussy Institution, in connection with Harvard University.

On the farm of Mr. Tucker, at Rodbourn, near Malmesbury, is a rookery that has been forsaken for some years until within the last few weeks, when it was observed that two pair of rooks made their appearance and built their nests. One pair have brought forth young, the other is now sitting.

THE "HARVEST FESTIVAL" at the Crystal Palace is not quite within our province, and does not need an exceptional notice. Messrs. Sutton & Sons, of Reading, have a large display of seeds and roots.

A FEW weeks ago Mr. Pearson, of Chilwell, mooted in our columns the subject of giving PRIZES FOR NEW KINDS OF ZONAL PELARGONIUMS, remarking, "I do not show myself, but I should like to see my kinds well grown for once, and would give a prize of £3 or £4 for a dozen plants of kinds I have sent out. If other raisers would do the same with their varieties, I think it would make a far more interesting show than one of variegated kinds; there is so much more variety in flowering Geraniums with green leaves than there is amongst the 'Tricolors.'" We are now enabled to announce that he intends to offer a prize of £5 for the best twelve bedding varieties, not variegated, sent out by him, and grown in 8-inch pots. The competition is to take place at the Royal Horticultural Society's meeting, to be held at South Kensington in the third week of May, 1873.

A MEETING was held on the 8th inst. in the Town Hall, Manchester, with the view of setting on foot an INTERNATIONAL FLOWER, FRUIT, AND VEGETABLE SHOW, to be held in that town in 1873. On the motion of Mr. Bruce Findlay it was unanimously resolved that an appeal be made for subscriptions to assist in carrying out that object. It was further resolved that the Manchester Botanical and Horticultural Society be invited to co-operate in the movement, and that they be requested to allow the Exhibition to take place in the gardens at Old Trafford. A Committee was then elected to carry out the proposal.

AN EXHIBITION OF USEFUL INSECTS AND THEIR PRODUCTS, and also of NOXIOUS INSECTS, with samples of the injuries

caused by them, organised by the Central Society of Agriculture, and under the patronage of the Minister of Agriculture and Commerce, will be held during this month in the Luxembourg Gardens in Paris. It will comprise silkworms and their cocoons of every species, with samples of thrown and raw silk; apparatus for silk-culture; with the manufacture and raw product of bees, and apparatus for bee-culture; a collection of noxious insects, and apparatus suited for their destruction; other useful insects; collections of mammals, insectivorous birds, reptiles, &c. The programme of the Exhibition may be obtained of the Secretary of the Society of Agriculture, 59, Rue Monge, Paris.

THE centenary of Linnæus's death will be celebrated at Stockholm on the 10th of January, 1873, when a statue of the great Swedish naturalist will be unveiled.

WORK FOR THE WEEK.

KITCHEN GARDEN.

CONTINUE to destroy weeds wherever they appear. Clear away all decaying leaves from *Broccoli* and *Brussels Sprouts*, or any decaying vegetable matter, and have all at once trenched into any piece of ground that is unoccupied with a crop, though the extent of unoccupied ground in a well-managed garden ought at this season of the year to be but very small. In order to prevent the attacks of slugs on *Cauliflower* plants and young *Lettuce*, mix soot and lime in equal portions, and dust them over with it once or twice a-week. Make good the blanks that may have occurred in the plantations of *Cabbages* or *Coleworts*, and keep a large reserve to make plantations in spring, as well as to make good the blanks caused by the winter. We may now expect frost very soon, and ought to prepare accordingly. *Lettuces*, for instance, that are just coming into use may be lifted with balls and placed in frames. Look over *Onions* that have been stored, and remove any that are beginning to decay. See that the disease is not progressing amongst *Potatoes*, and if it is, have them picked over without loss of time. Autumn planting seems the most popular panacea for the evils that have befallen this useful vegetable, and I think reasonably so, from the fact that the *Potato* being in the ground when the first exciting causes operate, it will sprout forth and avail itself of early spring weather, and may arrive in safety at a state of maturity before the disease makes its appearance. I would recommend the planting of greater proportions of the early sorts than have hitherto been common. The ground in which they are to be planted should be dry and trenched two spits deep, putting in the sets as the trenching progresses, 6 inches from the surface of the soil at least, and by no means let the ground be trodden upon till the *Potato* tops are above ground in the spring. Make the last out-door sowing of *Radishes*, which, if the winter do not set in early, may prove useful, and should they fail the loss will not be great. In late situations, where *Tomatoes* are just ripening, let them be gathered and ripened-off in the houses, as the least frost is fatal to them.

FRUIT GARDEN.

If wet weather sets in let the Strawberry plants in pots be protected from it, either by laying the pots on their sides or by placing them in cold frames, but in either case see that worms are excluded. Continue to collect late varieties of Pears and Apples, and where there are Walnuts they are also quite fit to gather. Attend to Apples in the fruit-room as before directed.

FLOWER GARDEN.

Although a few early frosts and heavy rains marred for a time the brilliancy of the flower garden, a little fine weather has done wonders in restoring the plants to bloom and beauty. This may not generally be the case, but we are persuaded where the composition of the soil of the flower-beds and borders has received proper attention, and where stimulants have been judiciously applied, the health and vigour of the plants generally have enabled them to continue the development of their flowers. It is seldom at this season that some little inconvenience is not incurred by the increase of stock requiring protection. Large *Fuchsias* and similar plants can be stored away in sheds, or caves, or in any situation protected from frost and damp, but the disposal of tender evergreens or still-succulent plants cannot be managed so easily, as light must be secured to them. The south or west side of a wall offers the best position primarily. A straw or wooden roof dependant from the top at a short angle would throw off the rain, and a temporary protection of straw-bound hurdles in front would assist to form a retreat for many things it would be unwise to hazard to the full exposure of our winter. Proceed with preparations that must necessarily be attended to before planting. Transplant evergreens. The accumulation of leaves on borders and lawns must be prevented.

GREENHOUSE AND CONSERVATORY.

The stock of plants fairly housed, arranged, staked, and cleansed from parasitic impurities—beyond the ordinary attention

of watering and regulating the admission of air, little is required. Trees liable to the attacks of scale should be narrowly looked over at least once a week that it may be repressed in time. The early-flowering Chrysanthemums that have for some time been staked and placed inside some structure will now be showing their flower-buds. Take care that these are thinned in due time, as half a dozen perfectly well-formed flowers are worth a barrow-load of inferior and defective ones. See, too, that all growing plants of the Chrysanthemum are supplied, as previously directed, with clear manure water in moderation; and if mildew should appear on the foliage, dredge it, after making them damp with the syringe with sulphur vivum, which will readily have the desired effect of eradicating that pest. Heaths or Epacrises, however located, will now need especial attention. Some late-flowering varieties will even now be growing pretty freely, especially those which have received late shifts: greater need of caution as regards watering such sorts will, therefore, be necessary. Some few Epacrises, such as *E. autumnalis*, will soon become gay with flowers, and are worthy of every encouragement. Admit air freely both night and day upon all favourable occasions, withholding everything in the shape of fire heat until its aid becomes absolutely required, in order to counteract the effects of actual frosts. A perpetual bloom of Roses may be managed with comparatively little artificial assistance. Young plants in a growing state of the Bourbon and Perpetual kinds, especially if kept in activity by progressive shifting and rich stimulants, will flower until early-forced plants begin to bloom; a common pit with a very little bottom heat will be found quite sufficient for this purpose.

STOVE.

See to the re-arrangement of the plants, putting those to rest that require it, and setting others to work in due time that have taken their rest. These should be shaken out and repotted, cutting-back such as require it, and placing them for a time in a structure of some kind that has the means of supplying a moderate bottom heat. In these structures, too, as previously directed, both heat and evaporation should be modified. As the supply of light diminishes, especial attention must be directed to such subjects as generally afford a supply of flowers during next month or two. Begonias which have been pinched-back and which are pot-bound, old plants of *Justicia speciosa*, *Hibiscus*, *Centradenia*, *Thunbergia fragrans*, &c., may be classed among the plants that come in naturally if properly treated; whilst the good old *Euphorbia jacquiniæflora* will, if kept rather dry for a fortnight or so, come in a month earlier than it otherwise would do. Nor must *Poinsettias* and the berry-bearing varieties of *Ardisia* be overlooked. The former should not be potted in too large pots, but should be so treated that the ball is well filled with roots just at the commencement of its flowering. The latter description of plants should have less water when the berries have attained their full size.

FORCING PIT.

This should now get a thorough cleaning of the old materials. If heat be applied by fermenting materials, these should be at once properly renewed with kindly substances. Nothing is better for the purpose than good tree leaves with a portion of old tan, saw or wood dust, or other refuse that has been charred for placing on the surface as a plunging material. Nothing is so healthy for this latter purpose as charred matter, which has the power of condensing from the atmosphere such gases as are most congenial for the well-doing of all plants, and the power of giving them off as required for the purification of the interior atmosphere. Of course the thorough lime-whiting of the whole structure from top to bottom should now be performed.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Celery.—We shall gradually earth-up our late *Celery*, as there will be now no danger from dryness at the roots. We do this by means of two semicircular pieces of old spouting placed together, and dry sifted ashes poured down, so as to give a thin casing of ashes round each plant, the banking earth being outside.

FRUIT DEPARTMENT.

We have cleaned and manured most of our Strawberries in the open ground. This greatly tends to protect and nourish the plants for the winter. Strawberries in pots have needed no watering of late. A part of ours are later than usual, but they are rooting freely, and sometimes we have had them too strong.

This is a good time for preparing to plant fruit trees towards the end of the month. We prefer, when there is much planting to be done, to trench the ground, and then plant on mounds on the surface, keeping these mounds damp enough with mulching. Were we planting trees that we could move at home, we should prefer transplanting them whilst they had still some green leaves, and these and the heat in the soil would ensure early and immediate rooting. We should have similar trees from a distance if the roots were carefully taken up, well puddled,

and packed in something damp. The last example we saw in the case of an amateur, who wished to do the very best, was a bundle of trees with the roots torn up, and packed in the middle of October in a single covering of mat. The roots were as dry as dry could be, and, as was to be expected, the wood shrivelled in proportion to the number of once green but dried and baked leaves. A great reform is wanted in the mode of taking up and transmitting trees.

ORNAMENTAL DEPARTMENT.

The above remarks will also apply to all ornamental trees and shrubs. From practice and observation, if we had much planting to do for ornament or profit, and success and economy were alike to be considered, we would obtain young plants from the nurseryman, keep them a year or two in a nursery of our own, giving them more room, and then take them up carefully and plant them at once. We do not believe that a gentleman can raise young trees so economically as he can purchase them from the free nurseryman. On the other hand, it is rarely that trees sent from long distances and in large quantities will thrive so well as those that have been nursed on the estate, and taken up just as they could be properly and carefully planted. Where much is to be done, the most economical and successful mode is to procure the plants from the shrub-and-tree-raiser, and yet have a small home nursery from which to take not more than can be planted in a day; and arrangements must also be made that the roots shall be but little dried or exposed before planting.

Flower-beds.—The storm of the night of the 10th and morning of the 11th damaged the flower-beds considerably, but still, few things have suffered except what were gorgeous beds of *Coleus*. As yet the *Iresine Lindeni* a little sheltered is safe; exposed freely, both it and *I. Herbstii* have suffered a little.

Where there is room, now is a good time to prepare for forming large specimens of *Scarlet Geraniums*, by taking the roots up carefully and placing them in the smallest pots they will occupy until fresh roots are formed, when they can have more pot room. If the pots can be kept secure from frost the plants will soon root, but they will do this much more speedily if they receive a little bottom heat to hasten rooting. Want of room prevents our doing more in this way, as fine specimens, especially by the last mode, are easily made. In both cases, with all tribes of the scarlets, we strip off most of the leaves, leaving only a few at the points. This saves picking-off afterwards, and every joint of the stems left will throw out side shoots. This, therefore, for fine specimens is a far better mode than cutting the plants down. When a little heat can be afforded, the flower-buds on the points of the shoots will push well for cutting. As example is often better than precept, we may mention that though we fear the double scarlets and pinks will be apt to grow too strong out of doors in our heavy soil, we yet wished to get a stock of good strong plants for pots for corridors. We find that their huge umbels of flowers in rich soil in pots do not shed their petals as most of the single kinds do. We raised, therefore, out of the ground a number of fine strong plants; all the earth fell from the roots. We potted in as small pots as the roots would go into, tied the plants when necessary, and took off every leaf except the small ones at the points of the shoots: the plants thus stand for the present in little room. We plunged the pots in a mild hotbed in a pit, and after watering each pot left a little air on at the top of each light. We shall watch the bottom heat. If taken care of, each of these may be made a huge specimen next season. The success will greatly depend on the early rooting.

Everything tender should now be placed under glass; even *Chrysanthemums* in pots should be protected.—R. F.

TRADE CATALOGUES RECEIVED.

Thomas Rivers & Son, Sawbridgeworth, Herts.—*Catalogue of Fruit Trees*, 1872.

F. & A. Dickson & Sons, 106, Eastgate Street, Chester.—*Descriptive Catalogue of Roses and Hollyhocks*.

I. Brunning, 1, Market Place, Great Yarmouth.—*Catalogue of Flower Roots, Dried Natural Flowers, &c.*—*Select List of Carnations, Picotees, and Pinks*.

TO CORRESPONDENTS.

* * We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

MAIZE (*F. Richards*).—Inform us how a parcel can be sent, and how to be directed.

PEARS BLACK-RUSTED (*L. J. K.*).—Your deep clayey soil is the cause. The roots have descended too far. Cut away the roots that have descended, drain the soil thoroughly, and mulch the surface over the roots to keep them near the surface.

YELLOW SUBSTANCE ON APPLE TREE (G. M.).—"The stuff" seems to be the excreta of some grub in the bark.

SELECT ROSES (A. Shand).—Marie Baumann, Gloire de Dijon, Charles Lefebvre, Mlle. Marie Raby, John Hopper, Baroness Rothschild, Paul Neron, Maréchal Niel, Alfred Colomb, Sénateur Vaisse, Pierre Notting, and Mlle. Bonnaire.

SELECT HOLLYHOCKS (Idem).—Beauty of Mitford, Black Douglas, Charles Eyre, Countess of Craven, Fred. Chater, Purple Emperor, The Prince, Sovereign, Stanstead Rival, Mrs. B. B. Tod, John Tweedie, and Cygnet.

RENOVATING OLD VINES (J. K. Y.).—Young Vines would soon come into bearing, and would in the end give you more satisfaction; but you may renovate the old ones. To do so, it would be best to remove all the old material of the border to within 4 or 5 feet of the stems of the Vines. In doing so, save some of the best roots. You might also remove some of the compost nearer the stems of the Vines if it will not injure the roots to do so. After seeing that the drainage is all right, fill-in with fresh compost.

VINES TO FORCE EARLY (S. S.).—Four Black Hamburgs, two Buckland Sweetwater, one White Frontignan, one Foster's White Seedling, one Muscat Hamburg, and one Black Prince.

WIRING A PEACH WALL—PYRAMID PEAR TREES OVERLUXURIANT (F. H. Law).—It will make not only the neatest but best job to plaster your wall all over. The neatest we ever remember to have seen had a thick outer coating of Portland cement, and was furnished with galvanised wires placed horizontally. We think the trees are liable to canker when galvanised wire is used. Common iron wire painted is the best material. Do not cut the young wood on your pyramid Pear trees close in; thin the shoots out, and shorten those that remain to one-third of their length. Root-prune the trees as well.

PRUNING AND MULCHING FRUIT TREES (F. J.).—Prune the trees as soon as the leaves are all off. It is better than spring pruning, especially if the trees are established. It is desirable to have the roots near the surface. Cover them about an inch with some rich loam, and mulch with 3 inches thick of littery manure about a foot beyond the point to which they extend. The mulching will be considerably reduced by spring, and should not be removed or pointed-in, as the roots are so near the surface, which is a good sign.

EAST LOTHIAN INTERMEDIATE STOCKS (Idem).—The plants which have not flowered will do so in spring, but they will need to be wintered in a dry soil or sheltered position, or they will not survive should we have a severe winter. If the plants are stiff and well furnished, we should pot the most promising, and winter them in a cold frame or sheltered position out of doors, plunging the pots in coal ashes. If they do well, finer subjects for the greenhouse or window in spring it will be difficult to find. By all means give some of them a chance.

PRUNING MAGNOLIA GRANDIFLORA VAR. EXMOUTH (T.).—The only pruning required is to cut-in the old, bare, and weak shoots, and where too close together prune them into within about half an inch of their base. Train a sufficient number of young shoots to keep the tree well furnished in every part, and especially near the base. Give a top-dressing of old cowdung.

PRUNING VINES (Idem).—As the Vines planted last year have grown freely and the wood is thoroughly ripened, the object being to obtain as much fruit as possible off them next year, you need not remove more than 18 inches of the tops of the rods, but cut all the laterals close to the cane. The earlier the pruning is done after the leaves fall the better, and to prevent bleeding brush the wounds over with the patent knotting used by painters. The canes must be bent down to make the eyes break at the lower part and uniformly throughout their length. Foster's White Seedling is a good white Grape.

HYACINTHS FOR LATE FLOWERING (J. B.).—We consider the end of this or beginning of next month as late as it is desirable to pot Hyacinths for a late bloom, but they may be potted in December. After potting, plunge the pots in coal ashes in a north aspect, and cover them with 3 inches of old tan or cocoa-nut refuse. Put over them a frame or spare light to throw off the wet. In this way they may remain six weeks without farther attention, but if the weather be severe they must have a covering of mats or other material to protect them from frost. This must be removed in mild weather. After six weeks the pots should be taken out, placed under lights, and merely protected from frost. You may keep them in this position until March, when they should be removed to a cold pit or frame. Place them not more than 15 inches from the glass, admit air very freely in mild weather, protect from frost, and the bulbs will not bloom until April. If you wish them later than that, keep them in a north aspect, giving plenty of air and light so as to prevent them from becoming drawn.

HYACINTHS IN GLASSES (A Winter Gardener).—The bulbs may be placed in glasses now, though it is not well to begin too soon. We consider it well to keep the bulbs for a week in damp moss or sand, then place them in the glasses, the water at first barely touching the base of the bulb; then put them in a dark closet until they have roots an inch long. Two drops of spirits of hartshorn may be added to the water, and a piece of charcoal when the plants are growing. They may be placed near the light after the roots are an inch long, and may have a temperature of 50° to 55°, but one of 45° to 50° insures stronger blooms.

COVERING FORCING HOUSE WITH OILED CALICO FRAMES (W. O. W.).—Your idea is good; the only objection to it is the light, which we fear the oiled calico will obstruct, so that under it the growths of plants subjected to a forcing temperature will be drawn and weak. The calico lights will prevent the cooling of the glass, and, consequently, save heat. The calico should be stretched loosely on the frames, and then covered with the preparation whilst hot by means of a large brush. Three pints of old pale linseed oil, sugar of lead (acetate of lead), 1 oz., and white resin 4 ozs. Grind the acetate with a little of the oil, add the remainder of the oil and the resin, and incorporate thoroughly in an iron pot over a gentle fire. Next day the calico is fit for use, or it may be coated over on the other side, and after twenty-four hours should be tacked on the frames tightly. If you try it we shall be glad to know the result.

PINES FOR SUCCESSION (Idem).—We advise the Queen, Smooth-leaved Cayenne, and Black Jamaica. They are excellent varieties. To fruit in water or late, the Jamaica is best. For next year's fruiting you should procure some fruiting and strong succession plants in about equal proportions. *Mesembryanthemum cordifolium variegatum* will not come true from seed. It must be raised from cuttings, and the plants should be strong before they are planted out. Seedlings would do, but the majority would have green leaves.

DOCEATHEON JEFFREYI TREATMENT (Crowood).—It belongs to the order Primulaceae. It is a fine, hardy, herbaceous perennial from the Rocky

Mountains. We presume you have caused it to grow by placing it in the greenhouse. We advise you to remove it to a cold frame, plunge the pot over the rim in coal ashes, and keep the soil moist, but not very wet. When the plant begins to grow in spring repot it, removing as much soil as you can without injury to the roots; give a moderate shift with good drainage, and use a compost of two parts turfy light loam, one part sandy peat, one part leaf soil, half a part of old cowdung, and half a part of sharp silver sand. Water freely when growing; and after the flowering is past, or the growth ceases, water only to keep the foliage fresh; when the leaves fall it will need very little water, yet the soil should not be allowed to become very dry.

WINTERING ALTERNANTHERAS (B. D.).—The *Alternantheras* are much alike in colour, having bronze-red leaves with brighter-coloured veins, ribs, or blotches in the centre of the leaves. *A. magnifica* has bright-coloured leaves, deep maroon, crimson, and a lighter centre; it is very dwarf, growing stiff and close to the ground. *A. amena* is also dwarf, and very similar, but the leaves are larger. *A. spatulata*, colour maroon, pink, and green, of stiff dwarf growth. *A. versicolor*—this has larger foliage than the preceding, is of stronger habit and erect-growing, not suitable for carpeting, colours pink and maroon. *A. paronychioides* is a good sort for edging, and good in colour. The plants should be taken up now, potted, and wintered in a cold pit with protection in severe weather, or they will be safer if wintered in a greenhouse. Cuttings should be put in during March in a hotbed, the plants potted in 3-inch pots when rooted, grown-on in heat, and hardened well off before planting out. The main points are to get the plants strong and to plant thickly so as to cover the ground, for they do not grow much until late in the season. All but *A. versicolor* do not exceed from 4 to 6 inches in height, and are good for edgings. The plants in the parks are not sold; the common plants are given away, as you would see noticed last week.

LAWN GRASS FAILING (J. H. E.).—Your lawn sown two years ago ought now to be in good condition, instead of which it is patchy and bare of grass. We presume the ground was well dug over, and in good tilth before sowing. If not, we should attribute the bad growth of the grass to that. The growth of Plantain, Dandelion, &c., you are doing well to remove. We should give the lawn a dressing of short manure at the end of February or the beginning of March; it may be mixed with an equal quantity of soil, which should be free of stones. Put on this compost about a quarter of an inch deep. Early in April, when there is a likelihood of rain, scratch the lawn well with an iron-toothed rake, clearing it of any littery manure, stones, or other rubbish, and this done, sow over it 8 lbs. *Cynosurus cristatus*, 6 lbs. *Festuca duriuscula*, 4 lbs. *Poa nemoralis sempervirens*, 6 lbs. *Trifolium repens*, and 4 lbs. *Trifolium minus*. After sowing rake lightly with a wooden-toothed rake, and roll well with an iron roller. The quantity of seed named is for an acre. Birds may take some of the seeds, but with the raking and rolling after sowing it will be few that fall a prey to them. Do not roll again nor mow until moist weather in May, then take off the tops of the grass with a scythe or mowing machine, and the first showery weather dress with 2 cwt. of guano to the acre. We think you will have a good growth of grass next year. Last May we sowed about an acre and a half with lawn seeds, and now the grass is superior to an old lawn adjoining. We dug and manured the ground before sowing.

LAPEYROUSIAS—BARNARDIAS—TRICYRTIS (A. C.).—Some of the *Lapeyrousias* are synonyms of *Meristostigma*, and others of *Anomathecas*. They may be cultivated like the last named. *Barnardia* is in the "Cottage Gardeners' Dictionary," and so is *Tricyrtis* in its "Supplement." *T. grandiflora* is *Uvularia grandiflora*.

PLANTAIN ON LAWN (M. D.).—A woman armed with an old knife and a pot of salt will soon eradicate the Plantains. Let her cut them out deep below the surface, and put a large pinch of salt into the hole. The grass soon overgrows the bare places.

HEATING CONSERVATORY FROM STOVE IN SITTING-ROOM (J. P. F.).—We are not sure if we understand you. We presume you mean to dispense with the fireplace in the sitting-room, 12 feet square and 10 feet in height, place a stove there near the hearth, take a pipe into the chimney, and from that stove obtain heat for the room and a conservatory abutting—9 feet square, 12½ feet high at back, and 8½ feet in front. First, then, the stove should stand clear of the fireplace, but so as to have a horizontal, or even slightly elevated pipe to the chimney, not more than from 2 to 3 feet in length. Secondly, we do not know the universal guinea stove that does such wonders, but, as far as plants are concerned, we have no faith in any stove where the fire comes in contact with the iron sides; it must be either lined with firebrick, or the firebox must stand free from the iron sides, 2 or 3 inches' space being allowed all round. Thirdly, we presume that you mean to heat the conservatory by leaving the sitting-room door open all night, 8 feet by 4 feet. With a nice fire in your stove in a cold night we think your plan will answer if the door be left open. You will have the advantage of the back wall of the conservatory being against this heated room, and that of itself would do much, and then the open door would do more. We managed to keep *Pelargoniums*, *Cinerarias*, *Primulas*, &c., in bloom in a place three times larger, by having the connecting doors open in cold nights, and with merely a good fire in the handsome grate of the contiguous room. Fourthly, we have no faith in a charcoal stove, or any other kind where there is no outlet for the products of combustion. A small stove with this attendant would keep the frost out of your conservatory without placing it in your sitting-room; for though stoves are cheaper as respects heating than an open fireplace, we question if they are equally healthy to sit near.

PROPAGATING NEAPOLITAN VIOLETS (M. W.).—The proper time to do this is at the end of April or the beginning of May, or as soon as good runners or offsets can be secured. The runners or suckers should be taken off with roots, or if they are not well rooted they should be planted at a foot apart by themselves, those which are rooted being also planted separately. Plant in rich light soil well enriched with old manure and leaf soil. They must be well watered throughout the season in dry weather; keep the ground well stirred with a hoe, and dust the plants with soot frequently to invigorate them and prevent the attacks of red spider. An east or partially shaded border is most suitable. At the end of September the plants should be taken up with good balls, and planted about 9 inches from the glass in a frame in good rich soil. The frame should have a south and warm dry exposure. Water may be needed at planting, but not afterwards. They cannot have too much air in mild weather, and should be protected from heavy rains, and have abundance of air. In frosty weather the lights may remain on the plants, and when it is severe a covering of mats should be put on. Exclude light so long as they are frozen. If you wish them to flower at any particular time, place them in a pit with a temperature not exceeding 40° to 45°.

ONION MAGGOT (An Old Subscriber).—Your ground being stiff we should manure it well in November, and trench it, but not deeply, or so as to bring

any great quantity of stiff soil or clay to the surface. In spring we should point over the ground frequently, especially in frosty weather, and if not in good heart we should apply a further good dressing of very well-decayed manure, and just point it in with a fork. The ground being in good working order, water it well with the ammoniacal water or liquor of the gas-works diluted with four times its bulk of pure water; in the course of a few hours again fork the ground well, tread firmly, and sow in the usual way. Salt and soot are good manures for Onions, two parts soot to one part salt mixed, and applied in showery weather at the rate of one peck to 30 square yards as soon as the Onions have arrived at the thinning state. We give ours a dressing of guano and salt, in the proportion of two parts guano to one of salt, at the rate of one peck to 80 square yards.

SHRUBS FOR CENTRES OF FLOWER-BEDS (F. I.).—*Skimmia japonica* is a fine subject, bearing red berries, and may be kept to a foot or 18 inches. *Cotoneaster microphylla* has red berries, dwarf prostrate habit; *Gaultheria procumbens*, scarlet berries, very dwarf; *G. Shallon*, purple berries, height about 2 feet; *Pernettya mucronata*, purple berries, about 2 feet; *Aucuba limbatia* and *A. longifolia*, both fine, the former with variegated leaves; *Andromeda floribunda*, white flowers; *Thuja aurea*, golden foliage; *Laurustinus*, white flowers; *Berberis Darwinii*, yellow flowers; *Osmanthus ilicifolius* variegatus, white variegation; *Buxus aurea pendula*, and *B. nova angustea marginata*, the former golden, and the latter silver variegated. *Vinca elegantissima* has fine variegated foliage, and makes the best of centres.

FUNGI (Downie).—We are willing to name your Fungi. Buy Hardwicke's "Science Gossip" for September, for drying and preserving, 4d. 192, Piccadilly. 1, *Agaricus mappa*, next to *A. phalloides*. If possible, send a fresh specimen or two by post to Mr. W. G. Smith, 12, North Grove West, Mildmay Park, London. 2, *Agaricus squarrosus*, young. 3, *Marasmius peronatus*, not edible. 4, *Agaricus maculatus*, poisonous. 5, *Agaricus eruginosus*, poisonous. 6, Jewelled Puff-ball (*Lycoperdon gemmatum*), elongated form. 7, Some *Pholiota*, but cannot name from specimen sent; perhaps *A. mutabilis*. 8, The Chantarelle (*Cantharellus cibarius*), edible, but not liked by all. 9, *Agaricus rutilans*. 10, *Cortinarius varius*. 11, *Agaricus squarrosus*, old.

NAMES OF FRUITS (G. B.).—1, Millot de Nancy; 2, Beurré d'Aremberg; 5, Easter Beurré; 6, Duc de Brabant; 8, Baronne de Mello; 9, Borovitski Apple; 10, St. Michel Archange; 11, We cannot name Grapes from so small a fragment of a bunch. Is it not Royal Mascadine? The Bouvardia is that named Hogarth. (*Peter Campbell*).—Beurré Ananas. (*Chirk*).—1, Triomphe de Jodoigne; 2, Knight's Monarch; 4, Conseiller de la Cour; 5, Bergamotte Cadette; 6, Belle de Noël; 9, Beurré Sterckmanns; 10, Adèle de St. Denis; (*G. B.*).—1, Braedick's Nonpareil; 2, Brabant Bellefleur; 3, Beauty of Kent. The Pear is Elton.

NAMES OF PLANTS (W. Driver).—1, *Abies Smithiana*; 2, *A. Douglasii*; 3, *Pinus excelsa*. (*M. H. M.*).—*Nigella damascena*, commonly called Fennel-Flower, and Love-in-a-mist. (*E. L.*).—The specimens were smashed and not numbered. Send specimens numbered in a pasteboard box. (*Mrs. Walker*).—It is *Aristolochia gigantea*, a native of Brazil. (*A. Flint*).—*Polypodium vulgare*. (*Signature illegible*).—1, *Atriplex patula*; 2, *Achillea Millefolium*; 3, *Torilis Anthriscus*; 4, *Helichrysum* sp.; 5, *Polygonum aviculare*. 6, *Nicotiana rustica*. (*J. H.*).—1, *An Impatiens*; 4, *A. Helianthus*. Remainder shortly. (*E. Payne*).—1, *Hibiscus rosa-sinensis*; 2, Indeterminable; 3, Next week. (*P. G. J. Z.*).—*Ampelopsis quinquefolia*.

POULTRY, BEE, AND PIGEON CHRONICLE.

MANAGEMENT OF POULTRY SHOWS.

I AM myself, by long experience, perfectly convinced that the so-called "open judging" is not the best adapted to promote the success of poultry shows; but that in order to obtain the most reliable awards the judges ought to be screened from constant "touting," and from the unseemly display of violence of temper sometimes ensuing when awards unfavourable to the interests of particular individual exhibitors then on the spot are recorded. Nor is this the worst light in which open judging can be viewed, as may be easily imagined from the following facts:—I have judged "openly," when exhibitors, after posting themselves on the opposite side of the pens then under examination, have said audibly enough for anyone easily to hear, "I bred all my best chickens this year from that hen;" or, as in another instance, "That's the same cock I won with at — show;" or (as occurred since this has been put in type), when judging with Mr. John Martin, where an exhibitor actually came up to us and stated directly, "Those are the best pens in the show, and win wherever they go." They were at the time not judged, and I am glad to say were fairly beaten.

Another case quite as annoying to those on whose awards all the responsibility depended is worthy of mention. Since our largest show has adopted "open" judging, a person who had obtained access by payment of the admission money for that especial day—a sum, by-the-by, which, though large in amount, most probably injures as much one way as it improves in the other the general finances (so far as poultry is concerned) of the show—when civilly remonstrated with by the arbitrators, urged that he had just as much right there as we had, and purposely continued listening to every private remark that emanated from either of us. Finding it simply impossible to go on in this way, we courteously explained that "either he must go out or we must." Although evidently a really well-educated man, and replete with aptly-chosen arguments in defence of his paid-for rights, he at length purposely turned his back against the fowls in the next class, to prevent our seeing them, and, in a way more conspicuous and offensive than ever, defied our legal right to remove him. On remonstrating with the committee, who concurred with us that he was not under the influence of liquor,

but was most probably trying to provoke others to some show of temper, he was at length with his companion removed, but certainly more by coercion than by coaxing. I may confidently ask, Can judges be equally cool and collected under such circumstances as though nothing of the kind had transpired?

I look upon "open judging" as a grave and serious blunder, and I say it because, as in all other matters, so in the management of poultry exhibitions by committees, perfection can alone be obtained either by dearly-paid-for experience on the one hand, or by availing themselves of the recorded conclusions of those who have preceded them. My own impression is simply that, in every case where it is possible to carry out the plan (and excepting in an open field, this is easily managed), no person beyond a careful man accustomed to handle poultry should be admitted to the show at all, from the time the birds are all penned until the awards are fully completed. This one attendant (or one to each set of judges) should be a man well practised in taking birds in and out of the show pens; and should the judges require his assistance to ascertain beyond question, "by handling," any dubious point that may arise, he should be always ready to take out any fowls selected for especial examination, and then withdraw a few yards, beyond earshot, during the time occupied in final consideration.

This leads me on to another item not less deserving of attention—viz., the wilful injury of prize birds at exhibitions. A brief anecdote will be my best explanation. Not long since I was waiting to begin judging at a show, where the arrangements, from a variety of mishaps, proved incomplete for more than two hours after the time originally fixed. I had walked about the field fully that time (or even more) "doing nothing," when it suddenly commenced raining with great violence. I was making off for shelter to the inn, about two hundred yards away, but a committeeman called out, "Mr. Hewitt, come into the tent, or you'll get soaked to the skin." I complied, and sat myself down on an empty basket at the entrance. Shortly afterwards, an exhibitor's man came into the tent, and spoke to me as he passed as to the weather; my eye naturally wandered after him, as he took a basket he was carrying to a large class of Asiatic fowls, many pens containing specimens at once ponderous and characteristically perfect. After promptly penning the birds with which he was entrusted, he hastily glanced along the class, and seeing a pair he well knew must beat him, put his hand through the door, abruptly grasped the hen by one leg, and shook her violently. I was not long in leaving my seat; and getting alongside, abruptly asked, "What on earth did you do that for?" His reply was a lie—for it is quite as well to call things by their proper names—"They were fighting." I rejoined, "If you don't get off at once, I'll fetch the two policemen from the entrance-gate to fight you." The committee were desirous to hush it up, rather than expose the delinquent, for the sake of their show; and consequently there was no present punishment: still, I am glad to state, the injured hen, though "scarcely able to make a stand of it," to use the words of one of the committee, was eventually (with her companion) the recipient of the first prize. We all know tails of winning cocks have been purposely pulled out on their success being first known at shows, and off-times within even a few moments of the awards being announced; by whom, of course, it was next to impossible to establish. There stood the injured birds, as reliable data it had been done certainly by some one, and not as generally urged—by "nobody."

I most willingly admit there are quite as honourable individuals among the poultrymen of those exhibitors who show extensively as in any other classes of society; and I verily believe as strictly conscientious feeling is often displayed by the inmate of the cottage as of the castle: yet I cannot but urge that as these black sheep do occasionally intrude themselves, let the rule be, All out till opening time, and then, with such proviso, no hurt to any fowls can ensue from the spleen and disappointment of competitors, be they whom they may; for when the show is well filled with visitors such practices will rarely if ever be attempted, conscience, as a general rule, making cowards of the guilty.

Again, another point. Birds, I am confident, have at times been changed prior to, during, and immediately upon the completion of the judging, to obtain surreptitiously some much-coveted premium. This, it appears to me, might also be checked to some extent by committees refusing any one admission until the awards are completed; and to obtain this desirable object also leads to another suggestion against these corrupt practices, striking as they do at the very life-source of our poultry shows, and which in some hands I am really at a loss to characterise in words as strongly as deserved. It is this:—Independently altogether of the judges doing so, let one of the committee go round and mark down all the empty pens in a notebook before the judges commence their duties. It will always be expedient to leave this "checking-off" to the last moment, even if he and the arbitrators both begin together; but as he would have nothing to do whatever with the awards or relative excellence of the pens on exhibition, a minute or two would

send the committeeman far ahead of the prize-giving officials, and would render any after-conflict of assertion as to empty pens impossible.

Another circumstance that at intervals has given much pain to acting committeemen, has arisen from wilfully displacing the prize-cards; whether simply from that pure spirit of mischief for which there are individuals who hold an unenviable notoriety, or for baser purposes, it is always difficult to determine. Some of the north country shows have been especially practised upon in this matter. This might readily be defeated by writing legibly on the different prize and commended cards, before attaching them to the show pens, the number they hold in the printed catalogue.

The return, along with the survivors, of fowls that unfortunately die during a show, for the satisfaction of owners as to the causes of death—the dispatch every evening by post of notice of birds “claimed” at shows, to allay the anxiety of exhibitors as to their non-return with the other pens—and the rule to prevent committeemen being held responsible for unforeseen accidents at shows—were suggestions of my own through the press many years back; and time has not only confirmed their advisability from their general adoption by committeemen, but also added to my own first conviction of their utility. I hope some of the present hints may prove equally worthy of at least consideration, and if it is supposed any comments I have written are intentionally personal, I can only assure all parties I had no such motive in their compilation.

There is, however, one other feature I cannot pass silently—viz., the betting practices of some few would-be-called amateurs (which decidedly they cannot be) as to the decisions. When it is known that eight and a half guineas have been given simply for the loan of a pen to win a five-guinea cup; and other cases have occurred where £35 have been lost and won by bets on a single award; it is not difficult to conjecture what these contingencies may give rise to, to secure the attainment of a “win;” or what compromise of all that is honourable, straightforward, and just may be wilfully accepted for the sake of obtaining such undeserved pecuniary success.—MR. HEWITT (*in Mr. L. Wright's “Illustrated Book of Poultry.”*)

BROWN LEGHORNS.

THE only variety of the Leghorn as yet known in this country is the White, which was first imported, so far as I can find, by Mr. Tegetmeier, and is becoming greatly valued as most hardy and an abundant layer. This is far the most common variety even in the United States; but there is another which they call Brown, which is far more highly prized by all American fanciers—so much so, that during the past season eggs have been sold at higher prices than those of any other variety whatever. I know of numerous sales of eggs at so high a price as ten dollars per dozen. The Brown Leghorn is said to be even harder than the White, to lay slightly larger eggs, and to lay them earlier in the year; besides which, its colour is adapted for ordinary wear, and allows it to be kept where white fowls could not be preserved in clean condition.

I had heard much through the whole of this year from various American fanciers respecting Brown Leghorns; and in the summer Mr. A. M. Halsted, of Rye, New York, kindly sent me over a trio, chiefly for portraiture. They appear to have reached Liverpool all right, but, very unfortunately, during the journey from Liverpool to London one of the hens was fatally injured in some way, bleeding profusely from the mouth and one or two wounds on the comb, and dying the night of arrival. They were each in a separate compartment, and fighting was out of the question. The other birds were in perfect health, and the hen laid next morning.

I must say that the sole surviving hen has quite kept up the lying character of the breed, having laid almost constantly since arrival. I set some of her eggs, and on August 2nd hatched nine chickens. They have had no special care, but are all doing well, and appear to be six pullets and three cockerels. My chief object in hatching birds so late was to see for myself how far they bred uniformly, as I had a strong suspicion the breed had been formed by a cross from the Black-red Game. This is strongly denied by all American breeders, who affirm that many birds have been imported direct from the Mediterranean; and I am bound to say that of all my nine chickens none favours such a supposition, the whole being as uniform in character as any brood I ever saw, which is so far satisfactory.

The shape of body, head, and comb is like that of the Spanish fowl, or rather Minorca, as the face is red and only the deaf-ear white—that is, both have large combs, the cock's being upright and the hen's falling over. The size is, however, not so great, but about midway between Spanish and Game; and this was one of the facts that made me at first suspect a cross. The plumage is exactly that of the Black-breasted Red Game in both cock and hen, the breast of the latter being a salmon colour, hackle gold striped with black, and back and wings partridge-marked. The cock, of course, is black on the breast, bar of wings, and tail;

hackle bright red striped with black, wingbow red, secondaries rich bay, and saddle the same as the hackle; the legs are yellow. Really good fowls of this breed being very scarce and dear, Mr. Halsted could not spare a very good cock so early in the season, and the bird he sent me is rather wanting in yellowness of legs, and has a deaf-ear much stained with red, but the hen appears first-class. He rather leads me to expect he may enter first-rate specimens at the ensuing great shows, and if so they will no doubt be examined with much interest.

I should not like to offer an opinion as to whether the breed will become a favourite in this country. The plumage is very neat, adapted for hard wear anywhere, and I can most thoroughly recommend the breed as likely to prove one of the most useful I ever met with. As a layer I believe it has hardly an equal, and the chickens appear as hardy to rear as chickens can be. The hens never sit, I believe, and the average production of eggs is about two hundred per annum. On the whole, I am much pleased with the birds, and, with so many good qualities to recommend them, have thought that these few particulars would be interesting to English fanciers. I should have given them before, but wished to see if the chickens fledged with tolerable uniformity.—L. WRIGHT.

THE CROYDON POULTRY SHOW.

I FULLY concur—in common, no doubt, with many other persons who take an interest in poultry and poultry shows—in the observations made in your Journal of the 10th inst. with regard to the impropriety (shall I add the injustice and the unfairness?) of several purchases of birds having been allowed to be made at this Show before it was fully open to the public. I arrived at the Show about the time at which your own reporter appears to have reached it, and I can confirm his statements upon the point in question. When I entered the Show at a few minutes past twelve o'clock, only about half the pens of poultry, and, apparently, only a few of the pens of Pigeons, had been judged; and I witnessed, I must say with much surprise, the fixing of “sold” cards to several pens of fowls some time before the cards announcing the Judges' awards were put up. The latter followed, and were fixed, too, upon the same pens—a circumstance which does not give rise to a very pleasant impression. I look upon this course as being the more objectionable, because the schedule of prizes expressly announced, in one of the regulations, that exhibitors would be permitted to alter the prices of their birds upon payment of the fee therein named at the Secretary's office, a provision which was rendered valueless, indeed rendered a mockery, to an exhibitor whose birds had obtained a prize, and who, had he been present and been made aware in a proper manner of the fact, may have desired to raise the price previously put upon them, but who may have been deprived of his birds by this premature claiming.

Whilst writing in reference to this Show, I would suggest that it would have been well had the Committee of Management, when they found that the entries were so numerous, obtained the services of a second Judge for the poultry at least, or even of two extra Judges, one for the poultry and one for the Pigeons. That they were not deterred from doing so by want of time is sufficiently clear from the fact that, on becoming aware of the large number of entries, they changed the place of exhibition from the Public Hall to the Central Railway Station. The time which sufficed for the one change would surely have sufficed also for the other. I would also suggest that at any future show that may be held at Croydon, the Committee will do well to see that all the pens of birds are staged alike; or, in any event, to take care that some are not placed upon the ground amongst the empty baskets, as was the case on the present occasion with the Ducks, and with some of the “fancy Ducks,” whilst others are placed either on the first tier or just “on the line.” The advantage which the birds placed in the manner last described possess over those placed as first mentioned is too obvious to need to be pointed out more plainly. In conclusion, I will only add the remark that Ducks and other waterfowl frequently experience great difficulty in obtaining their food and water from tins so narrow as those which are usually placed in poultry pens at exhibitions, or from tins fixed so far from the bottom of the pens as the tins in question are generally fixed, a circumstance which appeared to me to have been lost sight of at Croydon.—A LOOKER-ON.

HYDE POULTRY AND PIGEON SHOW.—This will be held on the 13th and 14th of December. There are two silver cups for poultry, with twenty-nine classes, and most of the prizes are 30s. and 15s. In Pigeons there are nineteen classes, and the prizes 20s. and 10s. each, with two silver cups.

OXFORD POULTRY SHOW.—I have been collecting subscriptions for cups for Black East Indian Ducks and Light Brahmas at the above Show, and I thank most warmly all those who have so kindly aided me, and whose subscriptions I give below:—Black

East Indian Cup—Rev. John Richardson, 10s. 6d.; O. E. Cresswell, Esq., £1 1s.; G. S. Sainsbury, Esq., 10s. 6d.; W. E. George, Esq., 10s. 6d.; R. S. S. W., 10s. 6d.; total, £3 3s. Light Brahma Cup—Mrs. Williamson, 10s. 6d.; Mrs. Turner Turner, 10s. 6d.; Miss Hales, 5s.; J. Pares, Esq., 10s. 6d.; W. E. George, Esq., 10s. 6d.; H. M. Maynard, Esq., 10s. 6d.; R. S. S. W., 5s. 6d.; total, £3 3s. May I take this opportunity of stating that this is the first year of our poultry Show, and that we have twenty-two other cups for poultry besides the two collection cups as above, so that we hope, our date clashing with no other, to be well patronised.—R. S. S. WOODGATE, *Pembury, Tunbridge Wells.*

LONG SUTTON POULTRY, PIGEON, AND RABBIT SHOW.

THIS Show was held on the 9th and 10th, in a large wooden shed erected for the purpose close to the railway station. Unfortunately the weather proved most disastrous for a gathering of this kind.

In poultry *Dorking* cocks stood first on the list. The four birds entered were of good size and quality. The pullets were in greater numbers, but were poor, with the exception of the winning pens. In *Cochin* cocks Lady Gwydyr won first and cup for the best pen in the first six classes with a cockerel of great beauty of form and feather, but somewhat smaller than is desirable; and the second was a nice Partridge-coloured not in full feather. In hens or pullets the first were very handsome Buffs and the second Partridge, both pairs being birds of this year. Next came *Brahma* cocks, all of which were of the Dark variety, but not at all a good lot, though the first-prize cock carried an unusual amount of leg and feet-feathering for a bird so free from hocks, but he was doubtless honestly shown. Pullets were a better lot, and the first-prize pair were far ahead of the rest in both marking and size. *Hamburgs* were not in large numbers, and were shown in pairs, as were also all the other poultry. In Gold-spangles the first and second were good, but the rest were poor. The Silvers were superior as a class. Golden-pencils were good, and the cup went to a good pen shown by the Duke of Sutherland. Silver-pencils were very good, and the prizes keenly contested, although some of the cockerels were a little yellow. *Spanish* were not numerous, but the first-prize winners a good even pen. Of *Polands* were only four entries, but all very good, the first-prize pen winning the cup for that section very easily. *French* fowls were good, the first and second being Crève-Cœurs, the third Houdans. There was but one class for *Game*, all the prizes being won with three excellent pens, the first being Duckwing, second and third Black Reds, and a very good pair of Brown Reds highly commended. In the *Variety* class fine-coloured Black *Hamburgs* were first, very good Malays second, and Black *Hamburgs* third. Of *Bantams* the Black Red Game were extremely good, the cock in the first-prize pen being a model bird, while all the pens mentioned contained excellent hens. The first-prize Brown Reds were perhaps as good as have been seen this season, and the rest of the winners were of good quality. In Any other Game, the first were Piles and the second and third Duckwings. In Black *Bantams* the first prize was given to an unusually good pen, the cock being one of the best birds we have seen this year, the rest of the winners being also good and in fine condition. In the *Variety* class the first were very good Silver Sebrights, to which the cup was also awarded; the second Pekins, and the third Golden Sebrights.

The class for *Ornamental Birds* was a most interesting one; and the first prize went to a beautiful pair of *Cereopsis* Geese, the second to a collection of Pheasants, and the third to a pair of Golden Pheasants.

Turkeys were very large and in the best feather possible. The *Geese* were also very fine; the first were Toulouse, the second Embden. In both Rouen and Aylesbury *Ducks* the winners of the first and second prizes were good in all points, but the remainder not noteworthy. Some very cheap birds were shown in the Selling classes, and several pens found ready purchasers. Many of the pens were too late for competition.

In *Pigeons* the whole of Mr. Fulton's birds arrived after the awards had been made. Of the *Pigeons*, in Black Carriers of both sexes Mr. Horner had it all his own way with good birds; but in cocks of any other colour Mr. Yardley won with a Dun of good length of face, but rather flat-wattled. Carriers of this season were a good class, a Black and Dun cock winning respectively. In Pouter cocks, the first was a Red of great size but rather thick in girth, and the second a smaller White, but very good in style. Hens, a good Red first and Blue second. Fantails, a large class and uniformly good, and the competition keen, although the cock in the first-prize pen secured the laurels for that lot and also the cup for the section. In Tumblers (Almond) Mr. Horner had it all his own way, although the other birds were very good, and he won the cup also. Tumblers (Any other colour), Blue Beards were first and Black Mottles second. Owls, the first a neat pair of foreign Blue, and the second Silver

English, rather plain-headed, but very good in frill. Barb cocks—Mr. Ivimy's splendid old cock was left out for want of condition, the first going to a capital old Black and the second to a very young bird of promising appearance. Hens, the first a good Black, and second Yellow. Of Barbs of this year, the first prize went to a Black, and the second to Dun, cocks apparently. Dragoons were a very good class, the first Blues, and second very sound-coloured Yellows. Antwerps, both Short-face and Homing, were very good. In the former, Red Chequers won first and cup for the section, and in the latter both were Blue Chequers. The Any other variety class contained some capital birds, the first being a pair of Yellow Swallows known as Nuremburges or Grease-quills, the peculiarity being that, unlike other Pigeons, they have a quantity of quills under the wings which are charged with oil that serves to keep up an intense lustre on the surface of the plumage. The second were Red Magpies. The first in the Selling class were Barbs, second Blue Pouters, and third White Frillbacks.

Rabbits were more numerous, but not so good as those of last year in the classes for Lops. In bucks of this variety a Sooty Fawn in nice order won the cup; the ears were 23 by 5 inches; the second being a Blue, the same length but not in the same order; while in point of length alone the highly commended Rabbits ran close upon the winners. Of does the first was a grand Fawn-and-white, 22½ by 4½; and the second Blue-and-white, 21½ by 4½. No doubt most of these will measure much better when in their own hutches, the weather being very cold during the Show. Of any other pure breed of bucks a Himalayan was first and a Belgian Hare second; and in does the first was also Himalayan and the second a Grey Dutch. For the heaviest Rabbits the winners were respectively 14½ and 14½ lbs. in weight. There was also a class for Silver-Greys, in which a young doe was first and a buck second, both Rabbits being well silvered. In the Sale class a Lop-ear stood first and a Himalayan second.

The point cup for local exhibitors was won by Mr. Ivimy with thirty-two points.

DORINGS.—Cock.—1, R. Wood, jun., Clapton, Thrapstone. 2, Rev. E. Bartum, Great Berkhamstead. 3, O. E. Cresswell, Early Wood, Bagshot. Hens or Pullets.—1, Rev. E. Bartum. 2, R. Fletcher, Stoneclough. 3, R. Wood, jun. 4, W. H. Robson, North Reston; G. Clarke, Sutton Marsh.

COCHINS.—Cock.—Cap, Lady Gwydyr. 2, T. M. Derry. 3, G. Speedy, Whithy. 4, W. Mitchell, Birkenhead. 5, H. Lloyd, jun., Handsworth. Hens or Pullets.—1, Lady Gwydyr, Stoke Park, Ipswich. 2, T. M. Derry. 3, J. W. Taylor. 4, H. Lloyd, jun.; W. H. James, jun., Fen Ditton Rectory.

BRAHMAS.—Cock.—1, Horace Lingwood, Creeping. 2, T. F. Ansell, St. Helens. 3, T. Barker, Burnley. Hens or Pullets.—1, Horace Lingwood. 2, R. Caborn, Biggleswade. 3, Lady Gwydyr. 4, Miss Fryer, Moulton Paddocks, Newmarket. 5, T. H. Hunns, Anlaby. 6, B. Wood, Uttoxeter.

HAMBURGS.—Gold-spangled.—1, H. Beldon, Bingley. 2, Duke of Sutherland, Trentham. 3, T. May, Wolverhampton. 4, M. M. Cashmore, Sheephead. Silver-spangled.—1, Ashton & Booth, Mottram. 2, T. H. Turner, Sheffield. 3, H. Beldon. 4, J. Fielding, Newchurch. 5, J. B. Bly, Lowestoft.

HAMBURGS.—Gold-pencilled.—Cup, Duke of Sutherland. 2, H. Beldon. 3, Capt. F. G. Coleridge, Wargrave. Silver-pencilled.—1, Duke of Sutherland. 2, J. Bowness, Newchurch, Manchester. 3, H. Beldon. 4, J. Dring; A. Stebbings, Lowestoft.

SPANISH.—1, J. Powell. 2, W. R. Bull, Newport Pagnell. 3, T. M. Derry, Geleby.

POLANDS.—Cup and 2, H. Beldon. 3, A. Aldersley, Keighley. **FRENCH FOWLS.**—1, R. B. Wood. 2 and 3, J. K. Fowler. 4, W. Cutlack, jun., Littleport.

GAME.—1, 2, and 3, R. Fletcher. 4, H. E. Martin, Sculthorpe. 5, W. H. L. Clare, Atherstone.

ANY OTHER VARIETY.—1, H. Beldon. 2, Rev. A. G. Brooke, Shrawardine (Malay). 3, Duke of Sutherland. 4, Stott & Booth, Huntley Brook, Bury (Black Hamburgs).

GAME BANTAMS.—Black-breasted Reds.—Cup, W. F. Entwistle, Westfield, Bradford. 2, Addie & Wilding. 3, W. Rogers, Sunderland. 4, W. F. Entwistle; H. Tongue, Farnsfield; W. Rogers; H. Shumach. Brown-breasted Reds.—1, E. Newbitt. 2, J. R. Yates, Prestwich Park. 3, W. F. Entwistle. 4, T. Barker, Burnley. 5, A. Cole, Long Sutton. Any other Variety.—1 and 2, W. F. Entwistle (Pile and Duckwing). 3, H. Shumach (Duckwing). 4, W. Adams.

BANTAMS.—Black.—1, G. Clarke. 2, J. Watts. 3, E. H. Ashton. 4, J. E. Thirle. Any other Variety.—Cup, M. Leno, Markyate Street (Laced). 2, B. S. Lowndes (Pekin). 3, H. Beldon. 4, M. Leno (Laced). 5, Draycott, Leicester.

ORNAMENTAL BIRDS.—1, Rev. C. H. Lucas, Edith Weston (Cereopsis). 2, G. W. Thomas (Silver Pheasants). 3, J. K. Fowler, Aylesbury (Gold Pheasants). 4, W. A. Johnson, Boston (Blackbird). 5, T. Hobster (Singing Lark). W. Hardy, Holbeck (Stock Doves); G. Wright; G. W. Thomas (Belgian Storks); M. Leno (Silver Pheasants); F. Townsend (Parrotet).

TURKEYS.—1, E. Arnold. 2, M. Kew, Market Overton. 3, Mrs. Harris. 4, E. Harris, Sutton St. James; T. M. Derry, Gedney.

DUCKS.—Rouen.—1, J. White, Whiteley, Netherton. 2, J. K. Fowler. 3, W. H. Robson, North Reston. Aylesbury.—1 and 2, J. K. Fowler. 3, Miss M. C. Campaign. 4, G. Reed. Any other Variety.—1, W. Binns. 2 and 3, M. Leno (Fancy Waterfowl). 4, W. Binns (2); J. Watts.

GOOSE.—1, J. White. 2, W. H. Butcher. 3, T. M. Derry. 4, M. Kew; J. K. Fowler.

SELLING CLASS.—No. 1.—1, P. Hutchinson, Spalding (Buff Cochins). 2 and 3, Miss M. C. Campaign, Spalding (Aylesbury Ducks and White Cochins). 4, H. Beldon; P. Hutchinson (Buff Cochins); G. Clarke (Brahmas, Rouen and East Indian Ducks).

SELLING CLASS.—No. 2.—1, H. Beldon. 2, W. Cutlack, jun. (Houdans). 3, G. Clarke, Sutton Marsh (Black Bantams). 4, A. Aldersley, Keighley (Silver Poldans).

PIGEONS.

CARRIER.—Black.—Cock.—Cup and 2, E. Horner, Harewood, Leeds. 4, E. Walker, Leicester. Hen.—1 and 2, E. Horner.

CARRIER.—Any other Colour.—Cock.—1, H. Yardley, Birmingham. 2, S. Watrell, Spalding. Hen.—1, S. Watrell. 2, P. Hutchinson. 3, E. Horner. 4, W. Bulmer. Young Birds.—1, W. Bulmer, Spalding. 2, P. Hutchinson. 3, W. Bulmer (2); T. H. Dowd, Boston; G. W. Thomas, Boston; E. Horner. 4, E. Horner.

POUTER.—Cock.—1 and 2, E. Horner. 3, G. W. Thomas. 4, T. H. Dows. Hen.—1 and 2, E. Horner.

TRUMPETERS.—1, Miss E. Beveridge, Ayr.

FANTAILS.—Cup, J. Walker. 2, J. F. Loversidge, Newark. 3, J. F. Lover-

sidges; W. H. Tomlinson, Newark; H. Simpson, Spalding. c, W. H. Tomlinson; E. Horner.

TUMBLERS.—*Almond*.—1 and 2, E. Horner. *Any other Colour*.—1, W. Woodhouse, Lynn. 2, E. Horner.

OWLS.—1, E. Horner. 2, R. A. Simpson. c, W. Binns, Padsey; H. Yardley.

BARBS.—*Cock*.—1, E. Horner. 2, W. H. Tomlinson. c, C. G. Cave, Spalding.

Hen.—1, 2, and hc, J. H. Ivimy, Long Sutton.

BARBS.—*Young Birds*.—1 and 2, J. H. Ivimy. hc, C. G. Cave. c, J. H. Ivimy; F. Brewster, Boston.

ANTWERPS.—*Cup*, H. R. Wright. 2, C. Crosland, Wakefield. hc, C. Crosland; E. Bentley, Fishpool. *Working*.—1, H. Jennings, Bradford. 2, J. W. Collinson.

hc, H. Beldon; J. W. Collinson.

JACOBS.—1, E. Horner. 2, J. Dring, Faversham. hc, T. W. Swallow, Northampton; E. Horner.

TURBOTS.—1, E. Horner. 2, O. E. Cresswell.

DRAGONS.—1, W. M. Mitchell. 2, A. W. Wien. hc, H. Beldon; F. Graham, Birkenhead (2); E. Horner. c, T. H. Dows; W. M. Mitchell.

ANY OTHER VARIETY.—1, H. Beldon. 2, E. Horner. c, H. Draycott.

SELLING CLASS.—1, Mrs. Ivimy. 2 and 3, H. Beldon. hc, C. G. Cave. c, S. Warrell; J. Dring (2); G. Clarke; L. Watkin, Northampton.

LOCAL PRIZES.—1, 2, and 3, T. M. Derry (Cochins and Geese). 1, G. Clarke (Black Bantams). 2, J. Mayes (Gold and Silver Pheasants). 3, A. Cole (Brown-breasted Game Bantams). *Pigeons*.—1 and 2, J. H. Ivimy (Barbs). 3, J. Dring. hc, A. Cole (Carrier); Mrs. Ivimy. c, J. Dring (Carrier); A. Cole (Carrier); J. H. Ivimy (Barb).

RABBITS.

LOP.—*Buck*.—1, J. Cranch, St. John's Wood. 2, J. Boyle, jun., Blackburn. hc, F. Banks, London; W. Canner, Leicester; T. C. & H. Lord, Huddersfield.

Doe.—1, T. C. & H. Lord. 2, C. Gravit, jun., Thorne. hc, Shaw & Allison, Sheffield (2).

ANY OTHER VARIETY.—*Buck*.—1, J. E. Pilgrim. 2, E. S. Smith. hc, E. Welburn. *Doe*.—1, S. G. Hudson, Hull. 2, J. Boyle, jun., Blackburn.

HEAVIEST.—*Buck or Doe*.—1, J. Taylor. 2, W. Beatty. hc, F. Banks; Shaw and Allison; R. Hutteridge.

SILVER-GRAY.—*Buck or Doe*.—1, A. H. Etches, Market Drayton. 2, S. G. Hudson. hc, J. Boyle, jun.; H. Dykes, Spalding; T. C. & H. Lord; R. H. Glew, Wakefield.

SELLING CLASS.—1, W. Canner. 2, R. D. Welburn. hc, R. D. Welburn; J. Cranch; A. Southwell, Wisbeach; W. Brook. c, R. Woodroffe, Horncastle.

The Judges were for *Poultry and Rabbits*, Messrs. R. Teebay, Preston, and E. Hutton, Pudsey; and for *Pigeons*, Messrs. Esquilant, Brixton, and W. Massey, Spalding.

TUNBRIDGE WELLS POULTRY SHOW.

THIS Show was held on the 11th inst. and was much larger and better than any previously held. The *Dorkings* were all good—Coloured, Silver-Gray, White, and Cuckoo. The *Spanish*, *Light Brahmas*, *White Cochins*, and *French* were all good classes. In the latter a Houdan of Mr. Wingfield's was left out of the list from his suspicious-looking spurs, though many fanciers affirmed he was an 1872 bird. The Selling classes were well filled, and many pens changed hands. Large *Duck* classes wound up the lot.

THIS Show increases every year in size, no doubt owing in a great measure to the great care bestowed on all birds by Messrs. Richardson, Roper, and Smith. It was held this year in a covered tent, and Billett's pens were used.

The *Spanish* were an uncommonly good lot. Mr. Brown, probably, was defeated owing to the cock's comb not being erect. *Dorkings* mustered very strongly and good, as usual. The first and second were Coloured, and the third a good pen of White. In *Dark Brahmas* the first prize was won by a splendid cockerel, but the pullet was not marked as we like to see them. If we mistake not, the cockerel in Mr. Wingfield's pen will make a wonder. The Rev. J. C. Knight also showed a good pen. In *Light Brahmas* the first and second were well deserving their honours. In *Hamburgs* the prizes were won easily. There was a strong show of *Game*. In *French* varieties there were good birds. In *Buff Cochins* was an easily-won first, and in *Any other colour* both prizes were won with capital Whites. *Bantams* were strong. The first prize was won with a capital pen of *Sebrights*, and the second were good *Game*, but we preferred Mr. Long's highly commended pen to the latter. The Selling classes brought together a large quantity of mostly good birds, for which the sales were brisk, as in most other classes. *Turkeys*, *Geese*, and *Ducks* were all very good, as were the beautiful pen of *Toy Pigeons* owned by Mr. Ware, and which obtained a first prize.

SPANISH.—*Chickens*.—1, E. J. Wingfield, Stratford. 2, — Brown, Putney Heath. hc, J. Francis, Hildenborough. c, Mrs. Brassey, Normanhurst Court; E. J. Wingfield; G. Osborne, Wolverhampton.

DORKINGS.—*Chickens*.—1, J. C. Roberts, Frant. 2, A. Arnold, Lamberhurst. 3, O. E. Cresswell, Bagshot. hc, Mrs. Lee, Fenshurst; A. C. Ramsden, Ashurst. c, Earl of Abergavenny.

BRAHMAS.—*Dark*.—*Chickens*.—1, F. Harris, Ramsgate. 2, W. Jacob, Dover. hc, E. J. Wingfield. c, W. Jacob; Rev. J. C. B. Knight, Chelmsford. *Light*.—1, Miss Hales, Canterbury. 2, J. Long, Forest Hill. hc, J. Body, Ashford; M. Leno, Dunstable; Miss Hales.

HAMBURGS.—*Chickens*.—1, R. S. S. Woodgate, Pembury. 2, G. Sales, Frant. hc, Miss Shelley, Maresfield Park; T. Marsh, Frant Road.

GAME.—*Duckwing*.—*Chickens*.—1, J. Jeken, Eltham. *Any other Variety*.—*Chickens*.—1, C. F. Barnett, Biggleswade. 2, G. H. Fitz Herbert, West Farleigh. hc, H. Ritchie, Frigate; J. Jeken, Eltham.

FRENCH.—*Buff or Cinnamon*.—*Chickens*.—1, H. Tomlinson, Birmingham. 2, H. Lloyd, jun., Birmingham. *Any other Variety*.—*Chickens*.—1 and 2, K. S. S. Woodgate. hc, Miss Wilde, Uckfield; Miss Hales.

BANTAMS.—1, M. Leno. 2, E. J. Wingfield. hc, J. Long; R. S. S. Woodgate; G. Ramsden, Ashurst. c, Miss Hawker, Tunbridge Wells.

SELLING CLASS.—*Cock*.—1, R. S. S. Woodgate. 2, W. Jacob. hc, F. Harris; R. S. S. Woodgate; J. Francis; T. Marsh. c, W. Dring. *Hen*.—1, J. Francis. R. S. S. Woodgate. hc, W. Dring; N. Edgill, Frant; A. Arnold; R. S. S. Woodgate; J. Field, Dordden; Miss Hawker.

TURKEYS.—1 and 2, A. Ward West Farleigh. hc, Mrs. Brassey.

GEES.—1, H. White, Wateringbury. 2, Earl of Abergavenny. hc, J. E. Austen, Horsenden.

DUCKS.—*Aylesbury*.—1, F. E. Arter, Canterbury. 2, W. Jacob. c, N. Edgill, Rouen. 1, F. E. Arter. 2, G. Field, Ashurst. hc, M. Sandford, Martin, Dover. *Any other Variety*.—1, M. Leno. 2, R. S. S. Woodgate. hc, R. S. S. Woodgate; M. Leno.

PIGEONS.—1 and c, G. Ware. 2, R. S. S. Woodgate.

Mr. Hedley, Redhill, was the Judge.

THE PIGEON CUP AT THE COMING DEVIZES SHOW.

PERMIT me to say a few words in reply to your correspondent, "SALISBURY." I am particularly interested in the Wiltshire Show, because not only it is one held in the south of England, but in my own county. Last year money prizes only were offered for Pigeons, and the birds were in character inferior to what they ought to be at a county show; indeed, many pens were not worth looking at. But if in character they were behindhand, in numbers they were equally so. In some classes there were only two entries—just enough to take the two prizes. It was clear that something decisive must be done, for the first object at all shows is to have a show worth people's looking at. Visitors pay an entrance fee, and the committee's object must be to have money's worth for their visitors. The primary object, then, is to secure birds worth looking at, and this object money prizes did not attain. I was written to by Devizes friends that this year the Pigeons must be dropped, as they did not pay, and were not last year worth their room. I implored the Committee not to omit the Pigeons. They found that unless a cup was offered the experience of last year would be repeated. What, then, was to be done? Exhibitors will prefer cups to money. I own I wonder that they should, considering the money their Pigeons cost them in various ways; still they do, and will not send their birds unless there is a chance of silver. The only thing left, then, was to offer a cup, and so secure a good show. I can scarcely see that the Committee, or any committee, are to blame for so doing. The first question everybody asks on entering the hall or the tent, as it may be, is, "What sort of a show is it?" It is not pleasant for a committeeman, or even a fellow townsman, to hear the reply, "The fowls are good enough, but the Pigeons are wretched." The fault surely rests not with a committee.

Then, as to the question of dealers. There is not, and never was, a poultry or Pigeon-fancier who is not at times a dealer. It is only a matter of degree; one man deals all the year round, the other, perhaps, once a month. Let us have no hypocrisy. One man deals in all varieties of Pigeons, another, perhaps, only in one variety. When people look at beautiful birds it matters not to them to whom they belong; the pleasure of a show consists in the number of good specimens. Manifestly a committee may just be able to afford to offer one cup, but may not be able, as "SALISBURY" suggests, to offer at least four cups. In conclusion, I only wish more cups could be offered, and, perhaps, "SALISBURY" may like to add a second, as, of course, he lives in our cathedral city. Should he wish to do this, I am sure the Committee would be very much obliged to him.—WILTSHIRE RECTOR.

CUPS FOR MAJORITY OF POINTS.

"SALISBURY" wishes to know whether, by committees offering a cup for the greatest number of points gained by one exhibitor, they increase the number of entries, or bring together the best birds. My answer is they do both, for if all the dealers combined were to enter for the point cup, and an amateur had only one good bird good enough to win, he would stand the same chance of winning the first prize in the class he exhibited as all the dealers with their entries in the same class.

I should like to know what objection there is to the dealers exhibiting. They pay the same entry fees, and all their birds are for sale, which gives an amateur a chance of getting good birds where they have only indifferent to compete with. I do not see that the dealers get much favour shown them, especially from the reports of some journals. As to the Worcester Show, it is well known by the leading exhibitors why there were so few Pigeon entries there, and I am bound to confess there would have been still less had not at least one of these professional dealers been importuned by the Secretary to send them some entries as they had so few. This professed dealer gave them some on the distinct understanding that his birds were not to be judged solely by one who is a dealer, exhibitor, and reporter. The consequence was, that at the last moment a second Judge was appointed rather than lose this dealer's entry fees.

"SALISBURY" refers to the Show held at Colchester at the beginning of the year, and as it points rather plainly to myself, I being the dishonest party, I will endeavour to prove where he is in error.

I have been an exhibitor at Colchester for some few years, and my particular fancy being only Tumblers, I should have only sent my four or five entries of Tumblers as usual; but as there was a cup offered to the winner of the greatest number of

points, I thought I might as well try to win it, knowing I could borrow other birds from my friend, this well-known dealer, which I did, and made fifteen entries instead of five at most, as I should have done had I only shown my own Tumblers, which plainly shows that my entries were two-thirds more than they would have been had there been no point cup offered. I think by reference to the catalogues you will find the entries quite double the number to last year's, when there was no such cup given, thus showing that committees are gainers instead of losers by offering such cups. As to the dishonesty of my exhibiting under the circumstances, if "SALISBURY," or other person, can point out a rule of the Show that I have infringed, I will promise that my name shall never again appear as an exhibitor.—J. FORD, *London*.

ALTERING HIVES.

In reply to the query by "E. H.," at page 281, on the subject of altering straw hives to make them available for supering, I would recommend him to adopt the following method:—

Have made a board of about 14 inches square by seven-eighths of an inch thick, properly clamped at the ends to prevent warping, with a central hole of about 2½ inches in diameter. The under side may, if liked, be bevelled away a little to enable the board to lie closer down on the crown of the hive, but it is not necessary, unless it is more than usually steep and narrow in that part. Then, supposing the bees are occupying the hive to be operated on, take a fine-bladed pocket knife with a good cutting edge. Proceed to cut down between the strands of straw, so as to liberate a piece of over 4 inches in diameter. At one point the strand will have to be cut diagonally across. To do this effectually, the blade of the knife must be kept well down, making sure that every straw is clean cut through, or trouble will ensue on the attempt at removal. This being done, take a good-sized lump of soft putty, which, having been well kneaded in the hands, is laid in a ring about 5 inches in diameter, on the lower side of the board, pressing it well to the wood. Reverse the board, covering the aperture with a piece of glass. Holding this in the left hand, insert the blade of the knife where the strands of straw were divided, and quickly tip the piece away, and before the bees have time to come up, put on the board, gently but firmly pressing it down on the putty until the board rests well down on the crown of the hive. The glass over the hole will enable the operator to adjust the board nicely in the centre. No putty ought to show beyond the edges of the aperture in the straw. I have found this plan answer every purpose, the putty fixing the adapter much better than plaster of Paris or Roman cement, which I long ago discarded. I have several times had bees working in supers within a few hours of having been so treated. In my parlour is a bell-glass containing 46 lbs. nett of honeycomb, which was filled on a common straw hive purchased from a cottager, and altered immediately afterwards. Before frame hives were known to me I was in the habit of purchasing strong stocks or swarms from cottagers, and having received permission to allow the hives to remain in their gardens until autumn, I altered them as already described, and was frequently rewarded by obtaining supers of finer quality than I could usually hope to get filled in the centre of a large city.—S. BEVAN FOX.

MR. PETTIGREW'S APIARY.

I HAD the very great pleasure this afternoon of visiting, by invitation, Mr. Pettigrew's apiary, along with about twelve or fourteen other bee-keepers, to see and weigh his stock of bees consisting of about forty hives. These vary in weight from 50 lbs. to 100 lbs. each, and are all of straw. The supers were very good, being about 14 to 18 lbs. each. We spent a very pleasant afternoon talking over bee matters, and each giving his experience of the season, and the best construction of hives for use and profit. Mr. Pettigrew stoutly maintains there is nothing like straw, in which I concur if profit is the only thing to be studied. Our next subject was how to induce the working classes to take up bee-keeping. We proposed to give at our agricultural shows in South Lancashire and North Cheshire prizes for the best collection in straw hives, also for the best collection in fancy hives, which at exhibitions are more pleasing to visitors than the straw hive. The meeting above noticed was called the first annual meeting of bee-keepers in the Manchester district, and I hope many more will be able to attend the next, and that good results may arise from such meetings.—SOUTH LANCASHIRE BEE-KEEPER.

RABBITS AT THE CRYSTAL PALACE SHOW.—Rabbits are increasing as favourites. They are to be exhibited at the great London Poultry Show in November. There are twelve classes in the schedule. To the Lops are allotted six, and amongst these two cups are already announced, and two amongst the other fancy varieties. More are expected to be offered, of which notice

will be given. Every arrangement, we are told, will be made for the comfort and safety of the specimens; and as this is an experiment in Rabbit-showing on a large scale, we should like success to attend it. We are glad to find that the entries are open, and that many fanciers belonging to the metropolitan clubs are heartily co-operating, so as to bring about a satisfactory result. A subscription list has been opened, and we trust will be freely responded to, in order to give additional cups to other classes. Any information may be obtained from Mr. J. Hume, 31, Bilton Street, York, or the Secretaries of the Crystal Palace Show.

FALKIRK POULTRY, PIGEON, AND RABBIT SHOW.—This Show is advertised for the 19th and 20th of November. For poultry there are twenty-three classes, with three prizes in each, and there are also thirteen extra prizes, consisting of pieces of plate, timepieces, &c. In Pigeons there are eight classes, with three prizes each, and six silver medals are also offered as extras. For Rabbits there are two classes for Lop-ears, and one for the heaviest weight, and these compete together for a silver cup, value £3 3s., while the Himalayan, Silver-Grey, and Angoras, have each a class, with one for Any other variety, and compete together for one silver cup, value £2 2s. The Hall in which the Exhibition will take place is well adapted to the purpose, and under the able management of Mr. Roberts it ought to be successful.

BEEES AND HONEY IN FRANCE.

HONEY and wax are harvested twice a-year in France. The earlier occurs according to location, from the latter part of May to the middle of July. This is called the summer harvest, and is usually better both in quantity and quality than the fall harvest. The honey is finer, better flavoured, more aromatic, and more easily drained from the wax. It is a pure nectar, collected from a great variety of flowers, and is little contaminated with pollen, particularly if gathered in supers.

At the beginning of July the honey harvest is usually at an end in Gatinais, while it is then just beginning in Picardy and at Troyes. In some of the southern departments the harvest commences a few weeks earlier than in the northern.

In the departments of Eure and Loire, they generally estimate that the product of a good stock of bees is five per cent. on the capital invested. The yield of honey and wax in the four departments, Gironde, Landes, Lot et Garonne, and Dordogne, amounted to about two millions of pounds in the year 1866. In 1867, the summer harvest of honey in Gatinais amounted 900,000 lbs., which was regarded as a fair average yield.

The fall harvest begins about the 15th of September, and continues till the end of December, according to the greater or less abundance of the yield, and the state of the weather.

At the summer harvest only a portion of the honey and wax is taken, a sufficient supply being always left in the hives to ensure the safety of the colonies in the event of an unfavourable season or a deficiency of pasturage. The largest portion of the honey harvested in the fall is derived from buckwheat, heather, and late-blossoming plants; and is much inferior to the summer honey in quality and flavour. It is also darker in colour, and very soon crystallises. It does not drain so readily from the wax, commonly requiring heat and pressure to effect a separation, thus deteriorating the product.

The honey is stored in large vessels or barrels, and care is always taken that the place where it is deposited is dry and warm. Watery honey deposited in a damp place soon spoils, and even the best honey will in time be injured if exposed to dampness.

Let the harvest be good or bad, the bee-keepers always keep honey enough on hand to carry their bees safely through the longest winter.—(*Canada Farmer*.)

PRESERVING FRUITS.

THE following particulars of the method pursued in the United States for preserving fruits (canned fruits as they are there called), will be found interesting by many readers:—

Fill your jars with fruits fresh from the vines or trees, taking care to put in as much as possible without injuring the form of the fruit, and when you have a sufficient number filled ready to boil, fill the intervening spaces with cold water, if you intend to can without sugar; if sugar is used, it is better to boil the fruit without the addition of water, filling the cans as they come from the fire with a syrup made by dissolving the sugar in boiling water; the fruit is now ready to boil.

Take an ordinary wash-boiler, and place it in a framework of laths, close enough to prevent the cans from resting on the bottom of the boiler, as the uneven heat from the fire is liable to crack the jars if placed directly on the bottom of the boiler, and put in sufficient water to about half cover the jars as they stand in the boiler. Next put in the jars, previously filled, taking care they do not crowd each other. If the covers are of glass, wet

the rubber rings and glass covers and put them on the jars, but not the metal rings. If metal covers are used leave the covers off, as they are not improved by boiling. Cover the boiler with its own cover, and let it remain over a slow fire until the steam rises round the boiler-cover the number of minutes set against that kind of fruit in the table below. When the fruit is sufficiently boiled take the jars one by one from the boiler, and set them on a wet cloth, shake the can gently, until all the bubbles rise to the surface and break, then, if the jars are full, put on the covers and screw the rings, if any, to their places. If not full, fill up with boiling hot water or syrup. As the fruit cools it will shrink a little, and, if all the air is excluded, will present an even surface free from bubbles, and your fruit will keep. If bubbles arise at any time the work must be done again, but this rarely occurs if the directions are faithfully followed. If economy is practised it is better not to sweeten the fruit, except pears, peaches, and strawberries, whose flavour is improved by it, as the fruit will not keep any better for it, and if from any cause you lose any fruit, you do not experience the loss of sugar. If the cans have metal rings they will need tightening as the fruit cools. Glass jars are preferable, as they can be used until they break from accident, and the fruit can always be examined and all imperfections removed.

TABLE FOR BOILING FRUIT IN CANS.

	Time in minutes.	Sugar to the quart.
Cherries.....	5	6 ozs.
Strawberries.....	8	8
Raspberries.....	6	4
Blackberries.....	6	6
Gooseberries.....	8	8
Currants.....	6	8
Grapes.....	10	8
Rhubarb.....	10	10
Plums.....	10	8
Peaches, whole.....	15	4
Peaches, halves.....	8	4
Pears, whole.....	30	8
Crab Apples.....	25	8
Sour Apples, sliced.....	10	8
Quinces, sliced.....	15	10
Tomatoes.....	30	None.
Beans and Peas, 8 to 4 hours.		

—(English Mechanic and World of Science.)

OUR LETTER BOX.

CROYDON POULTRY EXHIBITION.—Instead of the Rev. N. J. Ridley's La Fliche highly commended, it was Mr. J. Walton's Crève-Cœur.

CRYSTAL PALACE CANARY SHOW (M. G.).—It is not yet fixed. Last year it was held on February 15th, 16th, and 17th.

GROUND OATS (J. D. F. and D. A.).—Ground oats are oats ground with their outer covering on. We have published the Sussex miller's address who sells them in our last number. Crushed oats, such as are given to horses, are good for poultry, but they will not do for mashing.

EGG-PRODUCERS IN CONFINED SPACE (J.).—We know no bird that will answer your purpose so well as the Brahma. It has quite superseded the Spanish, because the latter, although it bears confinement well, is a dreary and tiresome monitor, and when a little out of sorts has a very disagreeable habit of eating all the feathers of its companions. It is not uncommon to see a pen of Spanish in which no bird has other than its wing and tail feathers. Brahmas are free from this defect, and they moult easily.

MATING BUFF COCHINS (L. D.).—If you have Buff Cochins cocks and hens, you cannot do better than put them together. The Cinnamon and Buff put together produce a beautiful bird, but it is not fashionable now-a-days. It is almost impossible to breed perfect cocks and pullets from the same parents, but if these are chosen as nearly faultless as may be you have a good hope of successful produce. Do not let anything blind you to defects. They are far more hereditary than virtues, and are sure to be prominent in the descendants. If lightly feathered on the leg use a heavily-feathered cock. Tolerate no vice of comb, and eschew legs like a lamplighter's ladder. If the loss of an eye is plainly the result of accident, if the eye be gone it will not disqualify. If the bird be sightless on one side, and the defect be apparent to the judge, the bird must be disqualified.

RED DORKINGS (S. S.).—The man was quite right, the bird is what is called the Red Dorking, and is cheap at the money. They are now very scarce. In the early days of poultry shows many of them were exhibited, and Sir John Cathcart was noted for the excellence of his birds and his constant success. The hens to match this cock should be a dark chocolate colour, spotted with white. The Cochins pullet should be treated with Baily's pills. If not at hand wash her nostrils with vinegar and water, give two pills of camphor each the size of a garden pea, and feed twice per day on bread and ale till the symptoms disappear.

BRAHMAS AS LAYERS (G. B.).—No fowl in health wants to sit after laying three or four eggs. Brahmas are the best fowls we know for living in confinement, and they are full average layers. If you wish to begin now you must buy pullets. Hens will not lay till the spring.

SILKES (A. R.).—They are very little larger than Bantams, though their light plumage conceals their pigmy size. Cock about 2 lbs.; hen about 1½ lb. Eggs 1½ oz.; those of the white-plumaged tapering to one end, and buff-coloured; those of the yellow variety round, and white-shelled. Moderate layers, but excellent mothers. Chickens easily reared, if not hatched before April nor later than June. Their black skin and bones render them unsightly table birds.

FOWLS FOR SMALL SPACE (C. L., Hammersmith).—In such a place as you describe, we should advise you to keep Dark Brahmas. They are more than average layers, and are amongst the hardiest fowls we know. A small space will serve for the adults, but you cannot rear chickens in such a place.

PROMOTING GAME FOWLS' CONDITION (Nemo).—Yolk of egg, white peas, and bread steeped in porter or port wine, are all excellent things to produce hard feather.

EXHIBITING SPANISH FOWLS (B. P. P.).—As no colour is named, and as "White Spanish" are unquestionably Spanish, the White may be shown in the ordinary classes. They are as truly Spanish as the Blacks, and are often sports from Black parents. This would not hold good with Minorcas, as they are a distinct and different breed. There are but two breeds of Spanish, the Black and the White. The Andalusians are an offshoot, and many good judges hold the Minorcas to be degenerate descendants, but they have existed long enough to be entitled to the name of distinct breeds.

MOVING A HIVE BY RAILWAY (Old Subscriber).—Suspend it by a rope passed underneath it from the roof of the carriage.

METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		A.M.				IN THE DAY.				Rain.
1872. Oct.	Barom- eter at Sea and Lev- el.	Hygrome- ter.		Direction of Wind.	Temp. of Sun at 1 ft.	Shade Tem- perature.		Radiation Temperature.		
		Dry.	Wet.			Max.	Min.	In sun.	On grass	
We. 9	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.	
Th. 10	29.846	53.7	50.4	S.W.	51.2	58.0	42.2	77.8	38.1	
Fri. 11	29.750	44.6	43.4	W.	50.0	55.8	34.8	96.8	32.4	
Sat. 12	29.464	48.3	45.0	W.	49.8	54.7	42.5	97.3	39.7	
Sun 13	29.648	42.3	41.0	S.W.	47.9	49.6	32.1	82.0	29.9	
Mo. 14	29.816	41.9	40.9	W.	46.8	52.9	31.8	79.0	30.0	
Tu. 15	30.022	41.6	40.3	N.	46.3	55.3	35.1	81.7	30.6	
	29.850	38.4	38.1	N.W.	46.2	49.1	31.9	74.1	29.3	
Means	29.770	44.4	42.7		48.3	53.6	35.3	84.1	32.9	
									0.482	

REMARKS.

9th.—A thoroughly damp uncomfortable day, not five minutes' sunshine all day, fair evening.
10th.—Very bright till noon, thin cloudy rain about 6 P.M., fine, though windy at night.
11th.—Beautifully bright, but occasional showers in the afternoon.
12th.—White frost, but very bright and fine, though rather cold, a few drops of rain.
13th.—A beautifully fine bright day throughout, rather misty at night.
14th.—Bright fine day, and splendid moonlit night.
15th.—Rather hazy early, very fine morning and afternoon, evening foggy.
A considerable decrease of temperature has set in, with frequent white frosts. The sky has been rather free from cloud, but the air has been misty and somewhat thick.—G. J. SYMONS.

COVENT GARDEN MARKET.—OCTOBER 16.

THERE are no fresh features in the trade, business being dull without alteration in prices. Imports are large, comprising the usual autumn goods.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	½ sieve	3 0 to 0 0	Mulberries.....	£ 1b.	0 0 to 0 0
Apricots.....	doz.	0 0 0 0	Nectarines.....	doz.	0 0 0 0
Cherries.....	per lb.	0 0 0 0	Oranges.....	£ 100 10	0 20 0
Chestnuts.....	bushel	0 0 0 0	Peaches.....	doz.	10 0 25
Currants.....	½ sieve	0 0 0 0	Pears, kitchen.....	doz.	1 0 3 0
Black.....	do.	0 0 0 0	Pears, dessert.....	doz.	2 0 4 0
Figs.....	doz.	1 6 3 0	Pine Apples.....	lb.	4 0 3 0
Filberts.....	lb.	1 0 1 6	Plums.....	½ sieve	5 0 0 0
Cobs.....	lb.	1 0 1 6	Quinces.....	doz.	1 0 2 0
Gooseberries.....	quart	0 0 0 0	Raspberries.....	lb.	0 0 0 0
Grapes, hothouse.....	lb.	2 5 5 0	Strawberries.....	£ lb.	0 0 0 0
Lemons.....	£ 100	8 0 10 0	Walnuts.....	bushel	15 0 30 0
Melons.....	each	2 0 5 0	ditto.....	£ 100	3 0 0 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	doz.	2 0 to 4 0	Mushrooms.....	pottle	1 0 to 3 0
Asparagus.....	£ 100	0 0 0 0	Mustard & Cress.....	punnet	0 2 0 0
Beans, Kidney.....	½ sieve	3 0 4 0	Onions.....	£ bushel	2 0 4 0
Broad.....	bushel	0 0 0 0	Pickling.....	quart	0 6 0 0
Beet Red.....	doz.	1 0 0 0	Parley per doz. bunches		2 0 0 0
Broccoli.....	bundle	0 9 1 6	Parsnips.....	doz.	0 9 1 0
Cabbage.....	doz.	1 0 1 6	Peas.....	quart	1 0 1 6
Capsicums.....	£ 100	2 0 3 0	Potatoes.....	bushel	3 0 5 0
Carrots.....	bunch	0 6 0 0	Kidney.....	do.	3 0 5 0
Cauliflower.....	doz.	2 0 4 0	Round.....	do.	2 0 4 0
Celery.....	bundle	1 6 2 0	Radishes.....	doz. bunches	1 0 1 6
Coleworts.....	doz.	3 0 0 0	Rhubarb.....	bundle	0 0 0 0
Cucumbers.....	each	0 3 1 0	Salsafy.....	£ bundle	0 9 1 0
pickling.....	doz.	0 0 0 0	Savoy.....	doz.	0 0 0 0
Endive.....	doz.	2 0 0 0	Scorzonera.....	£ bundle	0 9 1 0
Fennel.....	bunch	0 3 0 0	Sea-kale.....	basket	0 0 0 0
Garlic.....	lb.	0 6 0 0	Shallots.....	lb.	0 3 0 0
Herbs.....	bunch	0 3 0 0	Spinach.....	bushel	2 0 3 0
Horradish.....	bundle	3 0 4 0	Tomatoes.....	doz.	1 0 0 0
Leeks.....	bunch	0 2 0 0	Turnips.....	bunch	0 3 0 6
Lettuce.....	doz.	0 9 1 0	Vegetable Marrows.....	doz.	0 6 1 0

POULTRY MARKET.—OCTOBER 16.

THE trade has rather fallen off than otherwise, and prices, save for very choice goods, are hardly maintained. Grouse and Partridge are more plentiful, but the supply of Pheasants is small.

	s. d.	s. d.		s. d.	s. d.
Large Fowls.....	8 0 to 8 6		Hares.....	8 0 to 8 9	
Smaller ditto.....	2 6 3 0		Rabbits.....	1 5 1 6	
Chickens.....	1 9 2 0		Wild ditto.....	0 10 1 0	
Geese.....	6 6 8 0		Pigeons.....	0 10 1 0	
Ducks.....	2 0 2 6		Pheasants.....	2 6 3 0	
Grouse.....	1 9 2 0		Partridges.....	1 6 1 9	

WEEKLY CALENDAR.

Day of Month	Day of Week.	OCTOBER 24—30, 1872.	Average Temperature near London.			Rain in 43 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m.	h.	m.	h.	m.	h.	m.	h.	Days.	m.	s.
24	TH		56.3	39.6	47.9	20	42	af 6	46	af 4	27	af 10	27	2	23	15	47
25	F	Twilight ends, 6.40 P.M.	55.9	38.5	47.2	21	43	6	44	4	37	11	54	2	23	15	51
26	S		55.6	36.5	46.1	18	45	6	42	4	15	8	24	0	24	16	0
27	SUN	22 SUNDAY AFTER TRINITY.	55.1	38.4	46.7	27	47	6	40	4	47	0	32	3	25	16	5
28	M	St. SIMON AND St. JUDE.	54.5	35.9	45.2	27	49	6	38	4	58	1	48	3	26	16	9
29	TU		54.0	35.7	44.8	20	51	6	37	4	11	8	2	4	27	16	13
30	W	Hare hunting begins.	54.9	38.3	46.6	22	53	6	35	4	25	4	15	4	28	16	16

From observations taken near London during forty-three years, the average day temperature of the week is 55.2°; and its night temperature 37.5°. The greatest heat was 87°, on the 25th, 29th, and 30th, 1833; and the lowest cold 22°, on the 28th, 1836. The greatest fall of rain was 1.03 inch.

JOTTINGS ON THIS YEAR'S GARDENING.—No. 1.

THE POTATO DISEASE.



THE only preliminary remarks I shall offer are that the following and future "Jottings" on garden subjects in 1872 have been made in the north-east corner of the North Riding of Yorkshire, about three miles from the sea, over which the wind from the north-east to south-east meets no barrier but the shore, and being at a considerable elevation, we are exposed to its influences, which, however invigorating to man, often tell disastrously on vegetation. From the south-east to north-west, following the same course, there is no shelter but distant Heath-clad hills. Northward we have the sea, but the force of the wind from that quarter is broken by high cliffs, with woods near at hand. The soil varies very considerably—peat in some places, sandy loam, medium-textured loam to strong loam, and stiff clay—the subsoil being clay, sand, or gravel, rock cropping up very near the surface in some spots. I think enough has been said to justify a not very favourable idea of the jottings to follow. They are given, however, with a view to profit. I shall, therefore, deal with the most profitable subject first—viz., Potatoes.

Potatoes are generally very much diseased. The early kinds planted on a south border at the end of February, and comprising Ashleaf and Myatt's Prolific, had no diseased tubers, as they were ripened and up before the disease prevailed. They are laid on latticed shelves, are greened, and show no evidence of the disease, which, as was stated in this Journal a short time ago, a greened Potato never exhibits. Of Lapstone, Early Oxford, and Victoria planted at the same time (end of February), a few of the Lapstone are diseased, fully half of the Early Oxford—it also produced a bad crop this season, though usually a good cropper—and Victoria is in as bad a plight as to disease, but there is a very much better crop. The soil where the last three were grown is much stronger and wetter than where the Ashleaf and Prolific matured. Though a light soil is best for Lapstone, there was an excellent crop of it, and the little disease amongst the tubers is the more remarkable.

In March we planted in a light soil Ashleaf, Veitch's Ashleaf, and King. The growth of these was not good. They came up and were all along weak; the only crop good was Veitch's Ashleaf, and of it very few were diseased. King was fully half diseased, Ashleaf not many diseased; it was, however, a poor crop. At the same time as these were put in we planted in stiff soil Mona's Pride; a round but rather flat sort, name not known; Early Rose; and a late kind of Lapstone that has a purple sprout like that kind, but very strong and stiff. Of Mona's Pride one-fourth was diseased, and of Early Rose about the same; of the "unknown" flattish round kind about a tenth was diseased; and of the Lapstone variety referred to fully half, this being the third season of its growth, up to which it resisted the disease.

No. 604.—VOL. XXIII., NEW SERIES.

Early in April we planted Early Rose and the Lapstone variety, rose or pinkish-skinned, in light soil. These produced a heavy crop, and when mature one-sixth of the Early Rose and one-fourth of the rose-skinned Lapstone variety proved to be diseased. The last kind being like the other variety of Lapstone in its third year, up to which it showed no symptoms of disease, says nothing in favour of kinds recently raised escaping the disease better than the sorts that have been many years in cultivation. Last season I had a great many more kinds, but though some were heavy croppers, and others of tolerably good quality, I did not consider them deserving of garden culture, and the kinds I have now might be reduced to three or four—namely, Veitch's Ashleaf, Myatt's Prolific, Lapstone, and Victoria. The best of the lot is, as to crop and quality, Lapstone. It ought to be stated that there are numerous forms or types of the Lapstone, many of them poor croppers and of inferior quality. The true kind has a flat, broad, thick, and not very long tuber; eyes few and small, scarcely visible; skin rather rough or russety, free from irregularities; sprout bright purple, very thin or small, and not showing many rootlets; haulm stiff; leaves large, light green; flowers large, white, not plentiful; "apples" few; fit for use about the middle of July; ripe and fit to store by the end of that month or beginning of August. The "flattish round sort" I have without a name I had highly recommended as a second first early, coming in at the same time as Myatt's Prolific. Whether it is a kind of local name and origin I have not been able to ascertain. Whatever its name or origin, it is a flattish round tuber, eyes few and small, skin rather rough and russety, sprout reddish purple, moderately strong, haulm stiff and short, leaves large, flowers none. Fit for use the middle of July, and ripe the end of that month or early in August. The cropping quality is good, the tubers being of a good and even size with scarcely a small one. I am so well pleased with this that I shall prove it more extensively next season, and grow it largely should it bear out its good character, which is that it is as early as any of the second early kidney sorts, and equal to the Lapstone in quality. All the round sorts that I know, used before mature, are so waxy and watery as to resemble a Turnip or Jerusalem Artichoke. It is the same with the round kinds, whether grown in frames or the open ground; until the haulm be yellow or the skin set, it is of no use expecting anything approaching mealiness or dryness in them. Unripe (and they are later than most kidney sorts), they may suit those who do not value a Potato only because it is "new," and have no heed to quality. Mona's Pride I can only speak in favour of for frames, and that because it attains maturity soon; the tubers, though not numerous, arrive at good and even size, and their quality is good. That kind, Veitch's Ashleaf, and Myatt's Prolific, I consider the best for frames.

Respecting the disease, I would submit that it has never presented itself with me in the kinds grown in pots or planted in beds under glass. They are planted early, commencing in November, and planting is con-

No. 1256.—VOL. XLVIII., OLD SERIES.

tinued at intervals of about three weeks up to the middle of February; they mature before the disease manifests itself.

The true cause of the disease appears to me to be too moist an atmosphere and soil, which induce over-luxuriance or a gross growth; the tissues of the plant are consequently gorged with crude sap, requiring light and heat, with dryness, for its due digestion or elaboration. When a close, moist, dull atmosphere prevails and the soil is wet—when, too, there is but little range of temperature—the leaves are unable to digest or elaborate the sap impelled into them, and the descending sap by which the tubers are formed (I know that Potatoes will form tubers without the presence of leaves, but in this case the elaboration of the sap takes place by the skin of the tubers in course of formation, and they are very deficient in starch, being mere waxy lumps of matter) not being perfectly elaborated, it is conveyed by the stem to the tubers along the root-stem, and reaches them in a crude state, and thus a fitting medium is prepared for the spores, mycelium, and development of the fungus (*Botrytis infestans*), or Potato disease, which spreads until it destroys every part of the diseased tuber, or that part of it containing but little starch. The disease attains a greater degree of development in some tubers than in others. Some are entirely destroyed by the fungus, and become rotten; others are only diseased in part, the disease commencing at the core, and manifesting itself on the surface or skin in specks or blotches.

The parts of the tuber which resist the attack contain starch, which those which are diseased do not contain, or only in small quantity. It is also desirable to notice that a Potato diseased, but having the growing parts or eyes not affected, will on exposure to light have the parts not diseased greened. Those in which the growing parts or eyes are diseased will not green, even in the sound parts, but will retain their original colour as dug from the soil; ulceration sets in, and a peculiar unpleasant smell, the accompaniment of putrefaction, is emitted. In some instances the tubers do not rot, but the parts dry in. This is commonly the case with those having the eyes (though in some parts diseased) unaffected by the disease.

If the disease originates from the imperfect elaboration of the sap, or the crude matters taken up by the roots from the soil, or by the leaves from the atmosphere, how does it happen that the leaves first show evidence of the disease, the stem next, and the tubers last of all? The leaves are the seat of the imperfectly elaborated juices of the plant; by the leaves the sap is drawn up or derived, in them it is digested or fitted for the formation of the tubers, and from them it is conveyed to the stem and tuber. This imperfectly elaborated sap is diseased in the stomach and lungs—i.e., the leaves are diseased with the greatest virulence and first—they are first attacked, simply because they present a proper state of the plant to receive the spores or mycelium of the fungus; next to the leaves the stems are attacked, they acting as conduits of the imperfectly elaborated juices and receiving the diseased matter after the leaves; and lastly, the roots receive it, but with lessened virulence. Here we have an instance of the care taken by Nature and her All-wise Originator for the preservation and perpetuation of everything of its kind. The tuber, being the continuation of the Potato, were the disease to originate in it there is every reason to believe that a diseased tuber would communicate the disease to its progeny. On the other hand, a diseased tuber gives a stiff sprout and stiff sturdy haulm, ripens its tubers off in good time—a considerable time before those that are planted quite sound; and whilst the latter have, if the season be favourable to the development of the disease, many diseased tubers, those resulting from the diseased set are quite free, perfect in every way for the perpetuation of the kind. In this I see the care of Providence for the continuance and preservation of everything; also that the Potato disease is not hereditary.

If the above premises are just, and the theory established, it will follow—1st, That the disease is producible; 2nd, That it is avoidable. With the view of proving the correctness of the first proposition, let us suppose that we plant a frame, say a three-light one, with Potatoes in February, with the avowed intention of producing diseased tubers. The soil shall be rich, in garden phrase “full of manure,” such being conducive to free growth. Let the frame stand in the open ground, and let the sets be of a kind that has never been known to be diseased, or let them be of any kind whatever, due regard being paid to planting them at a distance suitable to the full development of the variety. We shall not put on the lights until the haulm is strong and tubers have begun to form; then

we will raise the frame 13 inches on bricks placed under the corners, and put on the lights. Over the frame let a wooden framework be formed 4 feet larger than the frame every way, and high enough for a man to walk erect round the frame, and let it have a span-roof with an angle of 45°, and a door. This framework of wood must be covered with tiffany No. 3, and made close-fitting. The frame shall be kept close, except when the Potatoes are watered, which must be with rain or pond water to which half an ounce of sulphate of ammonia has been added to every hundred gallons. Let five gallons be given per square yard with a rose watering-pot throughout the whole extent of the covered space, both over the Potatoes and the tiffany enclosure, replacing the lights at once. Water twice in the following week, giving half the quantity at the week's end, and the other half in three days. The haulm to be made thoroughly wet—leaves and stems—four times a-day, not confining the sprinkling to the frame, but applying it to the enclosed space, and it must be impregnated with the ammonia. The sprinklings to be continued until the haulm is quite decayed or the leaves fallen, the waterings also—viz., one watering at first with five gallons per square yard, second week five gallons, but at twice, third week five gallons at once, and fourth week five gallons at five times, to be continued at this rate until the leaves and haulm perish. Be sure that the tubers are diseased after about four or six weeks of this treatment. The rainfall will be equal to (with the sprinkling) nearly 6 inches per month; the atmosphere close, moist, such as we experience in dull wet weather, and perceptibly impregnated with ammoniacal vapours. This treatment, I believe, will induce a state of the plant suited to the disease, of which it, along with the tubers, will inevitably perish.—G. ABBEY.

HYBRID VIOLAS.

In a season like the present, unprecedented for its wetness, it is a great matter to have something to depend upon to embellish the flower garden besides our usual *Geraniums*, &c. Leaves rather than flowers were the characteristics of beds composed of these, and almost all other bedding plants were equally disappointing, with the exception of hybrid *Violas*. It is in praise of the latter class of plants that I wish to direct attention. Mr. Williams has conferred a great boon on the flower gardener in giving *Viola Perfection*, *Enchantress*, and *Magnificent*, which, when better known, will be universally cultivated. The late weather seems to have suited these *Violas* well, as they have flowered most profusely since the month of May till this late period of the autumn. Many persons are engaged in trying to improve the race, and obtain new colours between the *Pansy* and *Viola cornuta*, and in consequence of this *Viola Perfection* is surpassed both in quality of petal and dwarfness of growth. The two principal objects to be aimed at in obtaining improvements on existing varieties, are dwarfness of growth, and profusion of bloom, with variety in colour.

Although many crosses have been obtained from *Viola Perfection* with various coloured *Pansies*, I have my own doubts if they will prove as useful as the seed-bearer. Blooms from this cross are more like *Pansies* than *Violas*; but they all possess the botanical distinction which gives the name to the race *V. cornuta*, “the horn” projecting, and in some instances curling behind the footstalk. If the seed-bearer is the *Pansy*, the progeny are simply hybrid *Pansies*, and want the distinction mentioned above, as the spur or horn hardly reaches the footstalk. No doubt some of these hybrid *Pansies* will prove useful bedders; but I am doubtful if they will not take more after the *Pansy* than the *Viola*, and lack the robustness of growth of the latter. In the first instance, then, it is desirable to have the *Viola cornuta* for the mother. *Mauve Queen* and *Purple King* are both excellent in growth and shade of colour in the flower. The white variety, as far as I know, has not been tried as a seed-bearer, but would, doubtless, yield white and yellow hybrids crossed with self *Pansies* of these colours.

The *Violas* are easily fertilised, as a rule, if the following precautions be used. A fine sunny morning is the first requisite. About eleven or twelve o'clock remove the under petal carefully from the *Viola* to be operated on, and examine the pistil with the glass to ascertain that the bees have not anticipated you, and that there is no pollen already there; next very carefully remove the under petal of the *Pansy*, and observe in the sulcus or furrow with the glass and you will perceive the fine dust or pollen there—that is to say, if the flower is in a proper state, and apply this under petal so that the top of the pistil may be drawn through the furrow among the

pollen. A well-charged under petal will fertilise several blooms of the *Viola*. Now tie a piece of scarlet worsted round the footstalk of the blooms operated on, to direct us to the hybridised capsule, and protect the blooms from the intrusion of insects with a piece of fine net. If the weather should prove favourable, which is indispensable, and the cross prove successful, the capsule will ripen in three weeks. The seeds, whenever they become brown, should be sown immediately, and the seedlings brought on as fast as possible.

This season a batch of seedling hybrids from a *Viola* like *Perfection*, crossed with various-coloured *Pansies*, have flowered here. Among others there are two very fine shades of blue, lilacs, clarets, dark shaded with blue; but their constitution, dwarfism, and freedom of flowering has yet to be proved. This season I have a large quantity of seedlings from crosses with *V. cornuta* Mauve Queen and various coloured *Pansies*. The above-mentioned hybrids from *Perfection* are to flower next spring, and *Viola cornuta* Mauve Queen is invariably the mother. I feel sure without the *Viola* habit we shall not succeed in obtaining the desirable properties requisite for a good bedding plant; but I am as sure that in a very few years we shall have splendid variety in the colour of the *cornuta* race, quite excelling all bedding *Pansies* in constitution and freedom of flowering. To assist in attaining this desirable end I offer these few thoughts on the subject, with all deference to hybridists, for what they are worth.—C. STUART, M.D., *Hillside, Chirnside, N.B.*

SUCCESSION OF GERANIUM FLOWERS.

MANY may be glad if you would call their attention to the facility with which a good show of *Geraniums* may be secured in flower through a great part of the winter by merely taking off the buds during the summer. Very little glass is required, as the plants stand out of doors till the end of September, when they may be left to flower in a room. My neighbours often say to me, "How is it you always get flowers in your rooms in the winter, when hardly anyone has any?" They have been surprised to hear how easy it is.—E. F. G. T.

MOVING LARGE TREES.

I HAVE long thought that moving large trees is a mistake, and generally involves a waste of money. Where funds are forthcoming it is easy enough to build houses, but timber trees are things of the past as well as of the present, and ancestral Oaks cannot be bought except as felled timber. Even evergreen shrubs cannot be planted too small if the finest specimens are desired in the future. In making a new garden, were the same money expended in manuring and trenching the soil as is spent in large shrubs over and above what small ones would have cost, I believe that in five years the advantage would be obvious to anyone. Most shrubs make a great progress in good soil in five years; large shrubs transplanted often take that time to recover, and nearly as long to die; but in the case of timber trees I can hardly think anything more unlikely than that they can be moved of large size, and afterwards make permanent trees.

Who does not know that trees make roots in proportion to their wants? A timber tree in an exposed situation must be well anchored to the soil, but if a thick plantation be too much thinned at once, the first high wind will show how little hold the trees have on the soil. What takes place when a large timber tree is removed? It may have been growing in a sheltered situation; you plant it, perhaps, in an exposed one; the soil in which it has been growing may be light and sandy, that to which it is removed may be clay. In a deep soil its roots may have found plenty of moisture, and it is planted, perhaps, on a dry hill top. It is a fine specimen, and you desire to remove it; because it found everything favourable to its development where it has grown for perhaps fifty years, is it very probable it will continue in good health and beauty for another fifty when the circumstances—its "surroundings," as the Americans say—are so different?

But the question, How is it going to fasten itself to the earth? is to me the most difficult question. Of course you must support it effectually, or the first high wind will lay it prostrate. Plenty of wire rope tied a good way up, and well fastened to oak stakes driven in the ground, will render it secure; and give you, whilst they remain, as much idea of a ship's mast as an "ancestral Oak." But this is only for a time, some will say. When the tree has made fresh roots they can be removed.

There is, I think, the question of most importance. When will it have made these fresh roots? No doubt, if the tree in any degree gets over its removal, it will make fresh roots to sustain life, and in some cases—few cases, I think—grow vigorously where the soil and situation are favourable; but how is it to make roots sufficient to maintain its position when the wire rigging is removed? Is it in any better position than a crowded forest tree? I think not, and that those who spend their money in this manner ought to look on it as spent to produce a temporary effect merely till trees planted of small size have time to grow.—J. R. PEARSON, *Chilwell*.

CALCEOLARIA FAILURES.

FAILURES being common with the bedding *Calceolaria*, I give the following as a successful mode of culture, involving half the usual labour, and securing continuous growth and bloom. Prepare the frames early in October, by putting under them 4 or 5 inches of sandy soil, and so as to allow of the frames being tilted on bricks to give air at the bottom. Apply lime water, if necessary. Insert the cuttings firmly at the latest possible period, putting them in 2½ inches apart. Water them overhead, and keep them close till they look fresh; then push off the lights and lift up the frames in front, except in wet and frosty weather. If the thermometer fall more than 8° below freezing, cover up with plenty of litter till the plants have thawed. Twice stopping will be sufficient, once in February, and again towards the end of March.

Turn out the plants permanently 9 or 10 inches apart during the first mild days in April, using them for back lines or centres. The borders should be deeply dug in autumn, manured if poor, well forked in spring, and surface-stirred in hot weather. In 1871, I planted about the middle of April. In 1872, on March 18th, and the plants were blooming in the last week of June, and have not ceased to do so yet. Four hundred plants wintered in the shrubbery unprotected were fourteen days later. The sorts I grow are—Sparkler, height 1½ foot; Kayii, 1½ foot; Aurea, 1 foot 3 inches; and Victor Emmanuel, 1 foot.—CHARLES PRINSEP, *Goldthorn Hill*.

HARDY GEMS.—No. 4.

LITHOSPERMUM GASTONI.—This takes rank as one of the most beautiful as well as one of the rarest plants belonging to the flora of Europe. The honour of introducing it belongs to Messrs. Backhouse, of York. It is dwarf in habit, rarely exceeding 10 or 12 inches in height, producing straight branches from the base; the leaves are ovate-lanceolate, tapering to a point, about 2 inches long, and bright rich green on the upper side, but considerably paler below. In May it forms a leafy corymb of brilliant flowers of a rich violet colour, shading off to a lovely blue, with a white eye. It is a most desirable plant; indeed, it may be styled a gem of the first water. Native of the Spanish side of the Eastern Pyrenees.

LYCHNIS LAGASCE.—Again I come before my readers with a plant from the Pyrenees, but this time from the north-western side. The plant in question is far too little known, for as a rock plant I really do not remember one that pleases me better. It is dwarf in habit, forming a dense much-branched tuft, clothed with linear-obtuse, or somewhat lanceolate, and glaucous leaves. The flowers are abundantly produced, and are of a charming soft rose colour, with a white eye. It blooms during the months of May and June, and is a rare plant even in its native country.

ERITRICHUM NANUM.—This plant reminds one somewhat of a Forget-me-not. It forms dense tufts; the leaves are furnished with short white hairs, which give the plant a somewhat hoary appearance. During May these tufts or patches are covered with flowers of the most vivid azure blue it is possible to conceive. The effect the plant produces when judiciously planted must be seen to be appreciated. It requires to be well exposed to the sun and light, but must have a good supply of loam and peat to root into. It comes from the Swiss Alps, where, we are told, it is covered with snow for several months in the year.

IBERIS JUCUNDA.—With me this plant has died during the winter, but as it lived through the previous one I cannot call it anything but hardy. It is a charming species, forming compact tufts or bushes, ranging from 4 to 6 inches high. It is an abundant bloomer, producing its terminal soft pink heads of flowers about the end of April, and continuing nearly

two months in perfection. It must be planted in well-drained soil to do well. Native of Mount Taurus.

BRODLEA COCCINEA.—This is a bulbous plant, belonging to the natural order Liliaceæ, a native of California, and perfectly hardy in this country. The leaves are upwards of a foot long, linear obtuse, and dark green; the scape is longer than the leaves, and the flowers are borne upon a terminal umbel, the number varying from ten to twenty; the blooms are tubular, drooping, $1\frac{1}{2}$ inch long, and of a deep blood red, tinged with yellow towards the end, whilst the lobes are pea green. It blooms during May and June, and is a grand addition to our border plants. Native of California.—**EXPERTO CREDE.**

GLADIOLUS CULTURE.

I AM extremely pleased to see the prominent place that is given to this flower, and the valuable contributions the Journal is obtaining from various cultivators; and I gladly respond to the challenge of "J. B." to give my estimate of the varieties sent out last autumn. There are other points touched upon in these papers of more importance than even this, and on these points I hope to say something.

I am always sorry to differ from my excellent friend Mr. Douglas, for I have a sort of lurking suspicion that I shall be found on the wrong side of the hedge when I do so; but so far from thinking the sorts sent out last autumn the worst set we have had for some years, I think them one of the best. Comparing them especially with those of 1870, which were much more numerous, I think that there are more good flowers to be found in them than in those of that year. Phœbus I regard as the finest Gladiolus yet sent out, and in this opinion I am confirmed by my friend Mr. Edward Banks, of Sholden, who is the largest amateur grower of the flower that I know of. To this I may add, Lord Hawke is equally strong in his high estimate of it. On September 9th I sent to Brighton a spike, in my opinion the finest of its colour that I have ever seen. I also sent a spike to the Floral Committee, which was not noticed; at this I am not at all surprised. It is evidently a seedling of Legouvé, and has the good qualities of that flower in a higher degree. It is of nearly the same shade of colour, but the white blotch and the white lines in the petals are much more decided, while its thick leathery substance ensures its lasting a considerable time. The spike is large and the habit seems to be very vigorous. It has one fault—it is a late bloomer. I could not get any blooms in for either Kensington or the Crystal Palace, so I fear it will not be of much use to northern growers. Beatrix I have seen very fine. Whether it will equal Madame Desportes or Norma I do not know, but I differ from Mr. Douglas in thinking it like the latter flower; it is entirely different in shape, and the white is of a different shade. The one doubt I have about it is whether it has substance enough. Jupiter I look upon as a decided acquisition. It received the award of a first-class certificate when shown by Mr. Wheeler, of Warminster, and myself at the Crystal Palace, and attracted a good deal of attention. It is a striking flower—a deep rich crimson with blackish crimson flakes—a great improvement on Newton, which it resembles, and not unlike a seedling of Mr. Kelway's which he had at South Kensington, named Helle. Ariane I had but one spike of; but with me it was not like Delicatissima either in colour or shape. The flowers were set very closely together and faced well; indeed this is one character of all the four above named, as far as I have seen them. Minerve, Mr. Douglas thinks, like Phidias. I confess I do not see the likeness, and I am rather inclined to ask whether he has the right sort. Lord Hawke sent me a flower which he had received as Phœbus, but which was evidently Minerve. The colour of Phidias is more purplish than Minerve, and the marking quite distinct from that variety. Antigone is, I think, likely to be a useful flower, having a grand long spike. Virginalis is very similar to Marie Stuart, but I should not be surprised to find that it is an improvement upon it. Celestine is a second-rate flower, and the same may be said of Antiope, Ossian, and Didon; while neither Aleyon or Arsinée will be retained unless by those who wish to have a large number of varieties.

With regard to the varieties now being sent out I know nothing. I was at Fontainebleau early in July—too early to see anything. All that I could gather from M. Souchet was that he had *des belles fleurs* to send out in the autumn. As an observation somewhat similar to that referred to by Mr. Harrison Weir was made by me, I may as well explain what I

said, or, if I did not say it, what I meant—it was not that good seedlings could not be raised in England, but that I had never seen in any stand but those of the raiser any English flowers that could compete with the French ones. I again repeat it; nay, more, I have never seen in any stands staged for competition any English flowers, except by the raisers. Why this is I do not pretend to say. A clue to it may be afforded by the fact that two years ago Mr. Douglas exhibited a fine seedling of which Mr. Standish became the purchaser, but he could do nothing with it the second year, it came so very indifferently, and I know Mr. Douglas does not speak very hopefully of his seedlings. While I think we have this to bear in my mind, as "J. B." has well said, the flowers may be fine and attractive now, but they can hardly be sent out for five or six years, and who can tell what we might have by that time?

I do not think that "J. B." is far out in his lists. I should put the best and second twelve thus—

BEST TWELVE.	SECOND BEST TWELVE.
1. Adolphe Brongniart.	1. Eurydice.
2. Madame Desportes.	2. Beatrix.
3. Meyerbeer.	3. Molière.
4. Horace Vernet.	4. Ulysse.
5. Monsieur Legouvé.	5. Schiller.
6. Michel Ange.	6. Armide.
7. Norma.	7. Virgile.
8. Madame Furtado.	8. Madame Vilmorin.
9. Marie Stuart.	9. Delicatissima.
10. Orphée.	10. Sir J. Franklin.
11. Phœbus.	11. Primatrice.
12. Jupiter.	12. Nestor.

I have not added Shakspeare, for it is too early for us in the south. Molière, I know, often comes amiss, but when caught is very fine, while Virgile is splendid in colour.

I hope to return to the subject next week.—D., Deal.

THE POTATO DISEASE.

(Concluded from page 307.)

It is easy to see from the figure (fig. 2, page 307), the damaging effects the fungus must have upon the plant: the fungus stems protrude from its mouths, and prevent the emission of perspiration; the Potato plant thus gets surcharged with moisture, which rots the stems and leaves, whilst the mycelium preys upon the tissues.

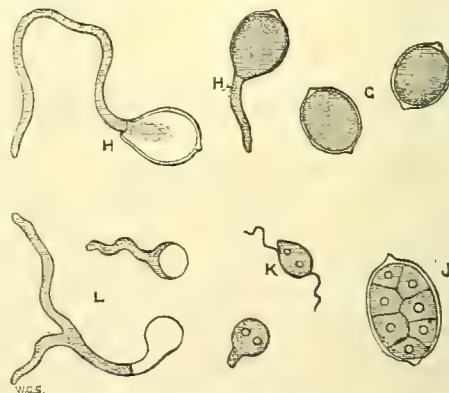


Fig. 3.—*Peronospora infestans*, spores and zoospores, enlarged four hundred diameters.

When the mature spores (c, fig. 3) fall from their apices, they readily germinate, as at n, n, by rupturing their outer coat, and discharging their contents: these contents immediately take the form of confluent mycelial threads, and produce the characteristic brown colour in the cellulose. The spores in this figure are enlarged four hundred diameters, or to the same scale as fig. 1. In fig. 1, however, it must be remembered that the spores represented are immature. In the perfect condition of the Potato fungus, certain privileged spores acquire greater dimensions than others, as shown at j, fig. 3; the contents of these privileged spores become differentiated, and produce within themselves a number of distinct nucleated cells, which at length are set free in the form of active zoospores, each zoospore being furnished with two thread-like processes (x), with which, when in fluid, they are

enabled to move rapidly about. These bodies germinate exactly in the same way as the ordinary spores, by discharging their contents through the ruptured outer coat (L), and must play a very important part in the economy of the plant; for it is manifest that although they cannot move unless immersed in fluid, yet it can easily be imagined that during rainy weather, or after heavy dews, and when the leaves of Potato plants are all wet and blown against each other by the wind, a few zoospores, originating from two or three infected plants, would speedily contaminate a large field of Potatoes: then, when we remember the hundreds of thousands of ripe ordinary spores blown about everywhere by the wind, their rapid germination, and immediate reproduction of other ripe spores and new zoospores, the rapid and fatal spread of the murrain remains no longer a mystery.

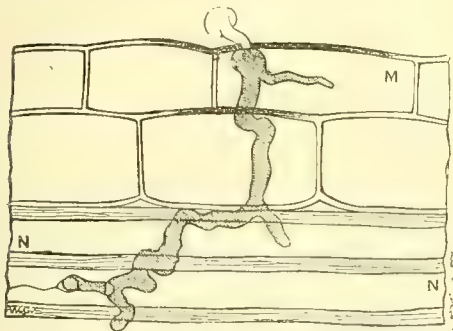


Fig. 4.—*Peronospora infestans*, spore germinating, enlarged four hundred diameters.

Fig. 4 shows a section through the stalk of a Potato plant, with a single mature spore germinating upon the surface, its mycelium penetrating the epidermis (M) and cortical layer (N).

Now, not only is *Peronospora infestans* able to reproduce itself from its spores and zoospores, but amongst the mycelium in the intercellular passages of spent Potatoes are found other bodies which there grow and fructify. These bodies, discovered by Dr. Payen, though referred to the *Sepedoniæ* by Montagne (the order next in succession to Mucedines, to which latter order the genus *Peronospora* belongs), are considered by Berkeley and others to be probably a secondary form of fruit (oospores) of the Potato fungus itself. These bodies, named by Montagne *Artotrogus hydnosporus*, are

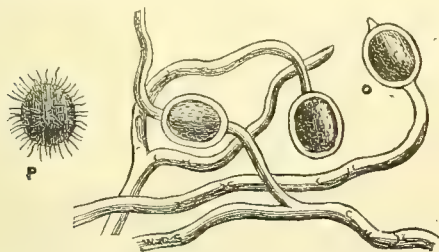


Fig. 5.—*Artotrogus hydnosporus*, enlarged four hundred diameters.

shown in fig. 5 magnified four hundred diameters; the young *Artotrogus* being shown at o in its mother cell (with threads), and at p free.

These bodies make the study of the Potato disease more complicated, and its ultimate eradication far more difficult; for they do not germinate at once (as do the spores and zoospores), or perish, but remain quiescent for a whole season, till certain favourable external conditions cause them to burst from their sleep and reproduce the parent. Resting spores and dormant sclerotoid tuberiform bodies are very common amongst fungi, a very remarkable instance being found amongst the *Agaricini*. In *Agaricus tuberosus* we have an *Agaric* springing from a tuberiform base, which is invariably found growing from the dead remains of the previous year's fungi, generally the *Russulæ*; but we have found the sclerotia at the bottom of the tubes of some of the *Polyporei*, the perfect *Agarics* emerging through the tubes.

Closely allied to the Potato fungus is another species found infecting Chickweed (*Stellaria media*), and named by Casparry *Peronospora alsinearum*. In this species, and some others of

the genus, male organs, or antheridia, have been detected, as shown at q, fig. 6, where the mycelial filaments are shown

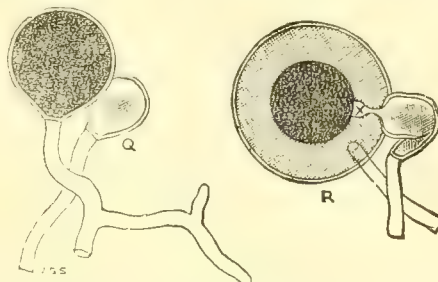


Fig. 6.—*Peronospora alsinearum*, enlarged four hundred diameters.

bearing the oogone, with which the mature antheridium is shown in contact: the contents of these cells are interchanged, and thus an oospore or resting spore is produced. At r is shown a section with the inflated summit of the fecundating tube of the antheridium (x) touching the gonosphere: this latter has a neat outline, produced by the membrane of cellulose which has just been secreted.

At fig. 7 (s) is shown a ripe oospore, furnished with its thick reticulated epispor, the surrounding protoplasm having almost disappeared; and at t a ripe oospore, whose epispor has been detached by maceration in water; a thick, colourless endospore remaining, composed of two thick layers containing protoplasm, with two unequal vacuities. The fecundating tube may be seen still fixed in the endospore at u. These oospores, or resting spores, of the Chickweed parasite, like those of the Potato, possess the singular property of remaining dormant during the winter, and germinating (under favourable circumstances) during the following season.

We have now glanced at the fungus and its effect upon the foliage and stem; but we are all of necessity most interested in its fatal effects upon the Potato itself. In the vast majority of instances the fungus makes its first wholesale attack upon the leaves, sending its destructive mycelial threads down the leafstalks into the stem, and thence, and lastly, into the Potato itself. If this takes place when the Potato plants are

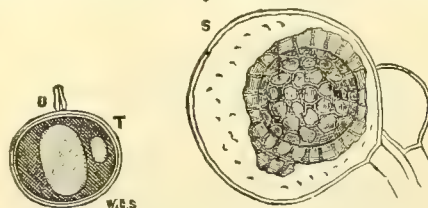


Fig. 7.—*Peronospora alsinearum*, enlarged four hundred diameters.

young, growth is at once arrested; but if the plants are well established, the tubers are found to be discoloured. This is undoubtedly caused by the presence of the fungus beneath the cuticle of the Potato; for if the Potatoes are taken up and kept in a damp air for a day or so, the perfect parasite presents itself upon the surface. From the exterior of the Potato the fungus penetrates to the interior, decomposing the tissues, and making the tuber a suitable nidus for various other fungi, which are not long in making their appearance. With the decomposition comes the disgusting odour so well known in connection with diseased Potatoes; the diseased tuber is now attacked by insects, and its end is one horrible foetid mass. It generally happens that the eyes are the last to succumb to the disease; and it is stated, that if these are cut out and planted, they grow into healthy plants; but if the fact is taken into consideration of the resting spores being produced within the intercellular passages of spent Potatoes, and that these resting spores are capable of lying dormant during a whole season, it seems reasonable to imagine that the planting of such eyes would be the one certain means of spreading the disease.

That the fungus attacks apparently healthy plants there can be no manner of doubt, the prevailing opinion now being that it is by no means necessary that a plant should be in ill health for a fungus to find thereon a suitable nidus. Contrary opinions have, however, long been held, and are still held on this point, many observers thinking that excessive moisture, over-cultivation (if such a thing be possible), electric influences

or attacks of insects, first affect the health of the plant, and predispose it to succumb before the attacks of the fungus. Mr. Alfred Smee, surgeon to the Bank of England, has long held his ground upon the hypothesis that the Potato is first attacked by an aphid, and so rendered a ready prey to the *Peronospora*, and says from his own observations he believes that an aphid invariably punctures the leaves before an attack of the fungus: he holds the same views with respect to the *Ascomycetes* of the Peach; but Berkeley and others nail their colours to the fungus, the whole fungus, and nothing but the fungus—and not without sufficient grounds; for, amongst other reasons, the immediate allies of the Potato fungus do not prey upon decaying matter; other species of fungi do, but these do not.

Whilst it is comparatively easy to say when and where the Potato murrain was first brought prominently into notice, and what the Potato disease is, it is by no means an easy matter to suggest an effectual antidote to its ravages. Dr. Hooker has recently published in the daily papers a plan devised by Professor Henslow for preserving the nutritive portions of diseased Potatoes; but, from its tedious nature, it is never likely to be carried out to any extent, or made use of by the people at large. When the disease first appeared, a quarter of a century ago, it was suggested that the moment it became manifest in the leaves the whole crop should be mown down and burnt before the destructive virus reached the tubers. Now, after all this lapse of time, no better plan can be suggested; but such is the rapid growth of the fungus, that unless the haulms be destroyed immediately on the appearance of the parasite, it will be too late: if a week or less be allowed to elapse, the mycelium will be in the tubers, and all the haulms a rotten mass.

In the case of the Vine disease, sulphur has been found very efficacious; but it is impossible to apply the fumes of sulphur to the Potato crops. Mr. Smee has destroyed *Oidium* in his Grape house with the fumes of bisulphide of carbon; but it is not easy to see how any fumes can be applied in the open fields.

It has recently been said that it is a disgrace to science and to scientific men that no perfect remedy has yet been found for the ravages of the Potato disease. The same may be said, I presume, respecting the ravages of the rinderpest, foot-and-mouth disease, and cholera itself; but I fail to see the disgrace to "scientific men." If there is any disgrace in the matter, it rests with those persons who are commercially interested in the success of our Potato crops; for, although we have had the fatal disease amongst the Potatoes for a quarter of a century, these gentlemen have still the stupidest possible ideas of what it is and how to cope with it, as is abundantly proved by the melancholy balderdash recently printed in the newspapers. — WORTHINGTON G. SMITH, F.L.S. (in *Hardwicke's Science-Gossip*.)

CALLS AT THE NURSERIES.

MESSRS. VEITCH'S, CHELSEA.—Among subjects peculiarly attractive at the present time are the *Lapagerias*, of which both the rose-coloured and the white are in great beauty. It is much to be regretted that the latter is so scarce, especially as it forms so charming a companion to the ordinary rose-flowered form, but scarce it seems likely to remain on account of the difficulty of propagating it in quantity. In a cool house, along with *Chorozemas* and *Boronias*, where it has been flowering all the summer, we noticed the hybrid *Begonia Sedeni* still producing numbers of its showy crimson-scarlet flowers, and promising to continue in blossom for a long time. In one of the stoves the large, rich yellow-flowered *Allamanda nobilis* and *Hendersoni*, trained on the roof and blooming freely, are making a gay display, along with the orange scarlet *Aphelandra aurantiaca* Roezlii, *Dalechampia Roezlii rosea*, *Urceolina aurea*, *Hippeastrums*, *Ixoras*, *Vincas*, and *Dipladenias*. The large and beautiful violet flowers of *Lasiandra macrantha floribunda* are here very conspicuous, and though individually of but short duration, they no sooner drop than others take their place. *Anthurium Scherzerianum* naturally occurs to one's mind when referring to successional flowering; for it may be said to be hardly ever without its brilliant-coloured spathes in one stage or other; and here they are both expanding and expanded, and give a life and colour which are now more welcome than even in spring and summer. Small hanging baskets of *Panicum variegatum* may also be noted as having a charming effect. Among *Crotons* several of the recently introduced kinds are in great beauty, as *C. variegatum undu-*

latum, with undulated leaves blotched with golden yellow, changing to dark red; *C. v. maximum*, a fine free-growing sort beautifully variegated with yellow; and *C. v. Wisemannii* with very narrow leaves. *Dracenas reginae*, *Mooreana*, and *magnifica* are also very striking by their fine broad leaves.

In a house devoted to fine-foliaged plants we will only pause to notice, among the host of subjects with which it is filled, *Thrinax elegans*, *Dæmonorops fissus*, and *Cocos Weddelliana* as extremely handsome Palms, and of the last-named the specimen is considered to be one of the finest in Europe. Of the singular Madagascar Lace Plant (*Ouviranda fenestralis*), there is also a fine specimen. In another house is a collection of Pitcher-plants, large, in the most luxuriant condition, and with fine pitchers. Among them are the hybrid *Nepenthes Sedeni* and *hybrida maculata*, together with *Hookeri*, *ampullacea*, and *Rafflesiana*, all "pitchering" freely.

The cool fernery, as heretofore, is one of the sights of the establishment, so fresh and verdant that one finds oneself at once transported far from the regions of London smoke.

Of Orchids, of which the collection is, probably, unrivalled in Europe, those in flower at present are not very numerous. Among them are the beautiful sky-blue *Vanda carulea*; *Cattleya Dominiana alba*, a pretty hybrid of Mr. Dominy's raising, with a lemon and purple lip; *C. Dominiana lutea*, yellowish white and rose; *Pleiones*, which are the autumn *Crocuses* among the Orchids; several *Cypripediums*; *Sophronites grandiflora*, of which the intense scarlet never fails to catch the eye at once; the beautiful *Odontoglossum Alexandræ*, and *Cymbidium Mastersii* just coming out.

In the ferneries we notice fine specimens of *Davallia Mooreana* and *Marattia Cooperi*, not to mention *Adiantums*, *Gymnogrammas*, and others almost without number. Of *Todea Wilkesiana*, a miniature tree Filmy Fern, there is a remarkably fine specimen, whilst of *Todea superba*, and others less novel but not less beautiful, there is an abundance. These are but a few of the features at Messrs. Veitch's at the present time, and, in a rapid sketch like this, necessarily the subjects of interest which are omitted vastly outnumber those noted.

MR. BULL'S, CHELSEA.—Mr. Bull, it need hardly be said, makes new and rare plants his speciality, and of such, certainly, his large show house and other minor houses contain no lack, and many of the specimens are of unusual size and beauty. Among fine-foliaged plants (including Palms), which are an especial feature, we noticed on a recent visit several species of *Dæmonorops*, plants eminently suited for table decoration; *Kentia Canterburyana* or *K. Fosteriana*, and *Livistonia altissima*, two handsome Palms for the same purpose; *Pandanus ceramensis*, also a fine plant for the table; *Areca lutescens*, a handsome yellow-stemmed cool-house Palm; and *Welfia regia*, one of the most handsome of new Palms. *Pandanus decorus*, with long bright green leaves, is also an elegant fine-foliaged plant. Other noticeable plants with very ornamental leaves, are *Heliconia vinosa*, the *Bertolonias*, a *Higginia* with corded velvety foliage; *Syngonium maculatum*; and *Ficus dealbata*, with the backs of the leaves silvery. Among *Dracenas*, *splendens*, *excelsa*, *reginae*, and *pulchella* are particularly fine; and of the new *Crotons*, as *undulatum*, *Veitchii*, *Wisemannii*, and *interruptum*, there are excellent specimens. *Croton majesticum* is splendid in colour, its narrow leaves dark olive, yellow, and red; and *C. spirale* with the foliage very narrow, and twisted in a spiral form, in colour purple, green, and yellow, is a singular as well as handsome novelty, which, we believe, has never yet been before the public. *Dieffenbachias*, a new and handsome plumose *Cycas*, and *Amorphophallus campanulatus*, just putting forth the leaf, which is enclosed in a curiously spotted and streaked sheath, are other notable features. New *Cycads*, *Palms*, and *Ferns* are too numerous to enter upon; and the large *Cyatheas* and *Dicksonias* must not be forgotten. There is likewise a specimen of *Pandanus elegantissimus*, which must be quite 8 feet high.

Orchids in flower are represented by *Mesospinidium vulcanicum* with pretty rosy-purple flowers, *Sophronites grandiflora*, *Odontoglossum grande*, *Barkeria spectabilis*, *Cattleyas*, *Cypripedium Schlimii*, and *Pleiones*.

In the *Geranium* house, which is now extremely gay, a plant of *Brunswigia minor* has thirty of its showy pink flowers, and in other houses a fine specimen of *Lapageria alba* had just ceased producing its pretty, bell-shaped, white flowers—to the charming effect of this plant we have already alluded; we also noticed a new *Maranta*, called *Mackoyana*, green, laced with white, and blotched with olive, a very handsome fine-foliaged

plant; together with *Masdevallia Chimera*, *Odontoglossum vexillarium*, and other new Orchids.

DOUBLE GLAZING.

At the request of the Editors I beg to inform them that my experience with regard to the cultivation of plants under double glass has been rather limited; however, as far as it goes the results of this method have been entirely in its favour.

As the house I have constructed has many new features, it would occupy too much space to enter into details at present. I will only add that it has thoroughly realised my expectations, and that I have no occasion to deviate in any way from my first design. Every facility would be given to anyone wishing to take a plan of my double-glazed house. The builder and gardener of P—m Castle, Exeter, took advantage of this offer last summer; at the same time they took a plan of the Peach avenue, an illustration of which appeared in this Journal about two years since. During the last six months of my experience of double glass I have found that there is no dew on the under glass, no drip, scald, or scorching; the house is cooler during sunlight, and when shut up early retains its heat many hours beyond those of single glass. The development of leaf and fruit is greater, especially the fruit, when the crop has not been too great, though a Rivers's Orange Nectarine in a large tub ripened seven dozen of excellent fruit this summer, and the tree is now covered with bloom-buds of full size. I have now sixty of these plants in tubs, which contain a large quantity of earth, and require but little watering. These tubs, when soaked for two hours in boiling creosote, seem to last for an indefinite period. They can be moved about by two men by means of a chain and band of iron passed round them, and two poles inserted in the chain. I have found two top-dressings during the season sufficient to carry the crop through. I think this gradual decay of leaf mould, black dung, and a small amount of wood ash better than flushing the plants with liquid manure; it is more natural, and the plants, by watering, get their food daily. The fruit ripens about a fortnight to three weeks earlier in this house.—OBSERVER.

WOOLHOPE NATURALISTS' FIELD CLUB.

THE concluding meeting for the season of the Woolhope Naturalists' Field Club was held on the 10th inst. The party proceeded to Whitfield, on their annual "foray among the Funguses." They were very hospitably received by Mr. and Mrs. Archer Clive.

The result of the "foray" was pleasantly evident at the Green Dragon Hotel, where a series of large tables were covered with a collection of specimens of Fungi, arranged very carefully by Mr. Worthington Smith, of London. All the various families and species were distinguished by labels, and it was quite easy for a student, beginning with the white-spored specimens on the left hand, to make a circumambulation of the fungoid world by simply passing along the line of tables. Some of the specimens were intensely interesting on account of their habitat. The phosphorescent Fungi which grew on the Oak beams far down in the coal pits, 1,200 feet beneath the cheerful day, were represented equally with the beautiful little *Agaric* which has its home amid the needle-like leaves of the Fir on the breezy hilltop. Here, too, were specimens of the deadly Fungus which kills almost at once, and the *Lactarius deliciosus*, truly worthy of its name, which differs very little from it. Then, too, there were several exceedingly rare Fungi, some of which have been noticed and described this year for the first time; and above all the wonder was, that with a summer and autumn so unfavourable, there should be any Fungi at all. The members and their friends, coming from widely distant localities, had all the same story to tell of the almost total absence of Fungi from field, lane, and road.

The exhibition of Funguses was, indeed, most interesting, and contained a very large variety of plants considering the great scarcity of the tribe during the present year. It was excellently arranged; every Fungus was in its own place in the family to which it belonged, and had its name attached, so that it afforded the most favourable opportunity to students of mycology to become scientifically acquainted with them. We have not space at this time to enter into a general review, or give the names of the several Funguses exhibited. We can only say that the rare *Thelephora multizonata* and the *Thelephora Sowerbei*, which created so much interest at the Royal Horticultural Society, in London, were there. The *Polyporus intybaceus*, which is an edible species, is said to have been very useful in Alsace and Lorraine during the recent famine produced by

war. Several specimens new to Britain were exhibited—one found at this meeting, *Gomphidius maculatus*, by Mrs. Cooper Key, of Stretton; another, one of the most brilliant Funguses recently found, *Cortinarius cinnabarinus*, was found by Mr. Renny, at Dowton, and for its brilliant metallic tint of carmine and gold it is really the most interesting of the year. One other interesting feature of the exhibition we must find time to notice, and it shall be the last. Mr. Cruttwell sent a most interesting box of Funguses and their mycelium, collected 1,200 feet below the surface of the ground in the Glynccorrwg Colliery, near Briton Ferry. They were growing on the pit wood supporting the roof of the main heading of the No. 2 Rhondda seam. The principal Fungus was the *Polyporus annosus*. It is very interesting, because it is often phosphorescent in the dark galleries of the mine, and sometimes has been the cause of much terror to the miners.

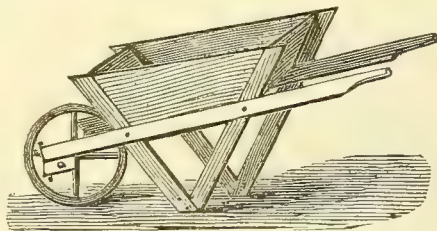
At the dinner, E. Y. Steele, Esq., presided. A great number of sketches of rare Fungi, coloured to nature, and very cleverly executed by Dr. Bull, were explained by him and were handed round.

A discussion followed on various phenomena of fungology, upon the appearance and disappearance of certain species; upon the position occupied by the Fungus in regard to decaying matter, several speakers holding that the Fungus was the effect and not the cause of decay; and upon the position occupied by the Fungus in the system of nature, whether it is really the scavenger, whose mission is to absorb decaying matter, and thus remove that which might be injurious to higher orders of existences.

On the same day a show of Fungi was to have taken place in the rooms of the Royal Horticultural Society of Ireland, at the Rotundo, Dublin, but we regretted to observe that the prizes offered by Dr. Wright for collections of Fungi did not evoke any competition whatever; but this defect was to no small extent remedied by the splendid collection of drawings of edible and poisonous Fungi kindly forwarded by the distinguished fungologist and artist, Worthington G. Smith, Esq., of London. These drawings were seventy in number, no less than twelve being devoted to illustrating the different varieties of the common Mushroom. All were from Mr. Smith's own pencil, and were faithfully and artistically executed. For this valuable and interesting collection Mr. Smith was awarded the Society's silver gilt medal.

A NEW FORM OF BARROW.

THE new form of barrow shown in the accompanying illustration has been recently registered. The inventor claims for



it that while it can be made quite as cheaply as any of the ordinary designs, its durability is tenfold. It cannot easily be broken, for, as will be seen, the legs are bolted through the frame, and secured by a couple of screws at the ends resting on the ground, a construction which renders them far less liable to break-off. Iron stays or cleats are dispensed with as unnecessary; and the body may be constructed of the requisite shape to suit any special requirements.—(*English Mechanic and World of Science*.)

POTATOES DISEASED AND UNDEASED.

It is very sad to read the accounts from nearly all parts of Great Britain of the ravages of the Potato disease. It is still a question whether one variety is more susceptible to the disease than another. It seems all to depend upon the state of the weather when the Potato is in a certain stage of growth. Heavy thunder-showers, with a continued electrical state of the atmosphere just before the crop is fully ripe, will cause it; and if this state of the weather does not exist at that time the crop will escape. This year the earliest varieties are entirely free from disease. I grew Veitch's Perfection, round, and Myatt's Prolific, kidney, and did not find a single diseased tuber in either of these sorts. The American Early Rose was grown in the fields, but it is an utter failure, not from disease, but because there was no crop; it was free from disease, as

the haulm was decayed before its appearance. Dalmahoy and Regents are the principal second early crops; about half are affected by disease. The Early White Don has not come up to our expectations; the crop of it is not good, and it is much more affected by disease than the Regents. Of Suttons' Flourball there is a very fine crop; the tubers are very large and coarse, but it is almost free from disease. A tuber here and there is affected, but I dug up five or six plants in different parts of the field, and did not find one. It is a very good Potato for spring use.—J. DOUGLAS.

I SEND a list of Potatoes grown by me this season, classed under three heads—namely, those nearly free from disease, those partially diseased, and those badly diseased; I also send a few remarks respecting them. Last season I gave a list of some twenty sorts I had under trial, and I have this time had thirty-nine varieties, many of them sent me from distant parts of England to see if the change of soil and locality would in anywise check the disease. I fear, however, it is past our skill to prevent it, except by planting early kinds as much as possible, and only some of the late ones, which we must have, and by giving them plenty of room. We must also plant those kinds which resist disease the best, and are the most suitable for the locality. This season has been an exceptionally bad one for Potatoes, and has not afforded a fair trial, although such kinds as have this time proved good I think may be considered good indeed.

I am glad to be able to speak in the highest praise of three newly-sent-out varieties—namely, Climax, an extra cropper, boiling very floury and white, and quite free from disease; new Late Rose; and last, but not least, the new Hundredfold Fluke, sent out by Messrs. Sutton & Sons, of Reading. It is not only good in quality and yield, but is a curiosity to look at—a perfect piebald. The stems grow very erect, and that, I think, is very much in favour of the variety as a disease-resister. The Red-skinned Flourball is much better with me this year than last, still it is far from being first-rate, but it improves by keeping. It is quite free from disease, an extra good cropper, and I am glad to say I found none of its tubers attacked by the grub like your correspondent "T. S. C." and others. I have found some other kinds of Potatoes, also Carrots and even Onions, similarly affected, and I have caught the Leather-coats in the act. I always manure in the autumn the ground I intend planting with Potatoes, and I have it turned up in ridges until planting time; I then fork them down and trench in the seed, which I always prefer, as far as possible, to be medium-sized whole sets.

SORTS NEARLY FREE FROM DISEASE.

Kidneys.

Ashleaf (Rivers's Royal).
Gloucestershire Kidney.
Myatt's Prolific.
Early May.
New Hundredfold Fluke
(Suttons').
New Late Rose.

Round.

Red-skinned Flourball
(Suttons').
Climax.
Wood's Scarlet Prolific.
Peach Blossom.
Prairie Seedling.
Champion of England.
King of Earlies.

MEDIUM DISEASED.

American Early Rose.
Caversham Defiance.
Manning's Kidney.
Bresee's Prolific.
Bresee's Pearlless.

Ashleaf (old).
New unnamed seedling from
Messrs. Sutton & Son.
Oxfordshire Kidney.

SORTS BADLY DISEASED.

Devonshire Kidney.
Lapstone Kidney.
Prince of Wales.
Paterson's Victoria.
Sutton's Early Racehorse.
Taylor's New Hybrid.
Golden Gem.
Negro.
Early Emperor.

Manchester Blue.
Skerry Blue.
Worcester Silks.
Smith's Dwarf.
Sutton's Seedling (round).
Pink-eyed Cheshire.
Alma.
King.
Scotch Regent.

—S. TAYLOR, *Sion Hill, Kidderminster.*

THE state of the Potato crops here is very different to those of your correspondents "T. S. C." and "S. B.," for I found Suttons' Flourball nearly half diseased and more affected than any other sort grown here. Of Prince of Wales about one-third of the crop was diseased. Of Scarlet Prolific there is an excellent crop, both as regards size and quantity, and very few tubers diseased. Myatt's Ashleaf, Racehorse, and York Regents

are free from disease and the crops good.—H. W. H., *Twickenham, Middlesex.*

LARGE FLOWER OF FUCHSIA DUCHESS OF LANCASTER.

THE accompanying portrait is of a flower of the variety named, and well known for its fine rose-coloured corolla and ivory-white sepals. It was sent to us by Mr. Olley, gardener to R. N. Byas, Esq., Quarry Hill, Reigate.



We cannot coincide in the opinion that a plant raised from the branch which bore this very large flower would bear none of a smaller size. In our opinion it is a fasciated flower, two flowers united. However, it is worthy of a trial, for we know that the Top-knot Pea (*Pisum comosum*) has a fasciculated stem, and is propagated by seed.

NEW BOOK.

The Clematis as a Garden Flower. By THOMAS MOORE, F.L.S., and GEORGE JACKMAN, F.R.H.S. London: John Murray.

THIS work is a treatise, and a very comprehensive one, on a genus of plants deservedly popular in every garden, and of late years very much more so since Messrs. Jackman, Messrs. Cripps, and Mr. Noble have by hybridisation produced so many varieties elegant in form and splendid in colouring, which have become established favourites in the flower garden.

The different species of *Clematis* which were formerly cul-

tivated in gardens were ill adapted to figure in the gorgeous style of modern flower gardening. The modest yet fragrant *Flammula*, the vigorous, rambling, and profuse-blooming *montana*, the slender and pretty *florida*, the equally pretty *Viticella* were for many years the most common representatives of the genus; but for covering a trellis or screening a wall their cultivation was limited in extent. Since the introduction of those gorgeous forms like *patens*, *Fortuni*, *Standishii*, and *lanuginosa* the *Clematis* has developed almost into what is commonly called "a florists' flower." We believe the Messrs. Henderson, of Pine Apple Place, were the first who raised a hybrid that attracted any notice among plant-growers, and several noted cultivators both in this country and the Continent were successful in producing hybrids or cross-bred forms, which were, for ornamentation, an advance upon the old species. But it was reserved to Messrs. Jackman & Son, of Woking, to startle the world with such a stride as had not previously been at-

tempted or anticipated. In 1862 *C. Jackmanni* and *rubro-violacea* bloomed for the first time, and then came in rapid succession a host of new and varied kinds. The hybridising was eagerly and successfully followed by Messrs. Cripps & Son, of Tunbridge Wells, and Mr. Noble, of Sunningdale, and by the united efforts of these gentlemen, and others whose labours in this field have been crowned with more or less success, the *Clematis* has risen in importance as a garden decorative plant.

The authors of the work before us have produced a treatise at once of great value and exhaustive. There is no species or variety, a description and qualitative analysis of which has not been given. Botanically and horticulturally everything that can be said or thought of has been said respecting the numerous varieties of which the work treats; and chapters are devoted to their culture, which by the mere lover of garden flowers will be read with pleasure and with profit. Let us take as an example of the latter the following:—



Clematis Jackmanni as a Permanent Bedding Plant.

"The employment of the *Clematis* as a bedding plant was first brought about in a kind of accidental way. It happened that some of the plants, in the plantation of hybridised seedlings from which *C. Jackmanni* and others were selected, were blown down during the early part of the summer, and the poles were not renewed. As the summer and autumn passed on, it was noticed that these plants spread out their branches over the surface of the ground, and flowered as profusely there as when elevated in the usual way. It was thence inferred, that if pegged down like *Verbenas* the varieties of *Clematis* would make good bedding plants, while they would have this advantage over ordinary bedding stock, that they would be permanent, flowering year after year, and that with increased vigour as they became more thoroughly established at the root. Experience proved that this inference was correct, and for some years the beds of *Clematis Jackmanni* and other hybrid varieties, to be seen at the Woking Nursery, have been objects of great beauty. The conditions were, perhaps, not the most promising, for the soil at Woking is of a light sandy character, and one which it might be supposed would not afford the plants sufficient nourishment, at least as permanent bedders; but the result has proved in every way most encouraging, the beds showing a mass of the richest blossom from July onward, till damaged by frosts.

"These beds were prepared during the winter months by deep trenching: a liberal dressing of good rotten dung, and a lighter one of calcareous earth, being thoroughly incorporated with the

soil. About the end of March the *Clematises* were planted out, each being headed-down to within some six or eight good buds or about 6 inches of the base, in order to start the lower buds. As they grew, and before they became entangled, the young branches were pegged down over the surface, and at the natural season—July, they came freely into flower, and were the admiration of all who saw them. As in the case of plants grown in other ways, a later crop of flowers may be had by late pruning—that is, if the plants are pruned late, the profuse head of bloom will come in later, but in all instances when once they come into bloom, the flowering goes on in succession for an incredible period, all that is wanted being some inducement to continue forming new growth, such as a supply of water if the weather is dry, or of liquid manure if the soil is exhausted. Let but growth be obtained, and flowers are certain to follow. This hint may be the more necessary, as when growers become more familiarised with the plants, the extraordinary profuseness of flowers may lead to the neglect of the aids which the plants really require, and which they so thoroughly repay.

"We recommend that when employed as a bedding plant, the *Clematis* should be permanently planted out, so that the roots may not be disturbed. The soil should be rich, open, and deep, of a calcareous loamy character if possible. If it be of a heavy texture it must be well drained and ameliorated by admixture of gritty matter, such as road scrapings, the sand washed up by the road side, burnt clay, or even ashes, in moderate quantities; an admixture of half-rotten leaf mould would also be bene-

ficial. If, on the contrary, it be light and dry, the soil should be strengthened by the admixture of good and rather heavy loam. Deep trenching and a liberal manuring should be resorted to before planting; and a thorough dressing of good sound manure should be forked-in annually in November, when, in ordinary cases, the summer growth may be cut back.

"When the beds are left bare and bald throughout the winter, the effect during the dull portion of the year is not altogether slightly. In order to avoid this, we have employed, and we strongly recommend the introduction of, such hardy evergreens as small bushy plants of both the green-leaved and variegated varieties of *Aucuba japonica*; of *Berberis Aquifolium*; of Holly, both green and variegated; of Box, and dwarf Conifers; and of close bushy plants of common *Rhododendrons*, &c. These should be planted, or plunged in pots, between the permanent plants. Then, some time in March, earlier or later according to the season, this temporary winter evergreen furnishing should be removed, so that it may not interfere with or prevent the timely training of the early spring growth of the Clematises. In this way the Clematis beds may be made to form part of a design for a winter garden of evergreens; or even an isolated bed, if thus filled in the winter, becomes changed from an eyesore into an object of interest and attractiveness.

"The young plants of Clematis, when planted out, should be set at about 2 feet apart, so that they may cover the surface quickly. When they become strong and well established, a portion of them may be removed if desired, as from the more vigorous growth of established plants they will branch more freely and cover more quickly. The growing shoots should be looked to at least once a week, and pegged down or trained where most required to cover the surface. They cling together so firmly by their clasping leafstalks that this should always be done before they get all entangled, for the young shoots would be certain to suffer injury in the process of disentanglement. The plants should be raised by some means so as to give a convex surface to the bed, and thus the better to display their flowers. This may be done in a variety of ways—either by raising the surface of the bed itself to the desired shape; by pegging down a layer of twiggy branches, such as pea sticks, for the plants to grow over; by fixing a common hooped trellis of rods, to which the shoots should at the first be tied; or, what in many situations would be the best plan of all, but which would be scarcely admissible in a dressed parterre, by arranging root-masses of suitable bulk on the surface of the beds for the plants to scramble over and amongst. Whatever plan may be adopted, the plants must be trained as already recommended till they have furnished the space to be covered, when they may be allowed to grow more at random.

"As the plants do not throw up flowers from the lower portion of their stems, it is desirable in training them to cover the beds, that the points of one series of plants should be so arranged that they may overlap those portions of the adjoining ones which remain bare. This point should be borne in mind from the first, and until the whole surface is evenly covered with flowering wood.

"It has already been intimated that continuity of flowering is dependant upon continuity of growth. Now this at once suggests summer feeding. Thus, in dry weather manure water should be given alternately with pure water, the water not being applied over the leaves and flowers, but beneath them. It is to be recommended, if the summer is at all a dry one, to have the beds thoroughly saturated with pure water just as the buds are being developed and begin to acquire size; if this is done thoroughly it will increase the size of the flowers, and will carry the plants on for a considerable period. One or two such thorough waterings may be given subsequently if the season is such as to require it, applying at least one dose of liquid manure when the plants have been flowering for a considerable period. No other attention is required till the frosts of November come, after which the plants may be pruned hard back.

"It has been recommended to water beneath rather than over the flowers and leaves, but it is surprising, considering the size of the flowers, how well they withstand heavy rains and storms. Though necessarily affected to some extent, they show less damage than most of the ordinary bedding plants.

"We have hitherto mainly referred to the summer and autumn-flowering varieties, but the bedding season of the Clematis may be commenced at an earlier period by the employment of *C. Standishii*, which is exceptionally hardy, and probably also by the use of some of the newer sorts bred from it, but which have not as yet, so far as we know, been tried. As regards their general treatment, the foregoing remarks apply to these also, but, being of a more slender habit, they should be planted in rows at 18 inches apart. These spring-blooming sorts commence and finish their flowering before the ordinary summer bedding begins, say the middle of May and June, but the effect at that early part of the season is most pleasing. As they flower from the old wood, it becomes necessary with them to train the young shoots so that they may be exposed to light and air and become thoroughly ripened; but this would not interfere

with the growth of other dwarf summer bedders, as the branches of the Clematises, if neatly trained in lines, or as a border, at about the level of the plant used with them, would not be unsightly; or the Clematis shoots could be trained as a carpet over the beds, and flowering plants in pots plunged at intervals between them, but not so closely as to interfere with their maturation. We can especially recommend *C. Standishii* for this purpose. In certain cases, after becoming well established in a bed, we have known *C. Standishii* to push with so much vigour just before the flowering time as to make it advantageous to cut off the young growth in order to show up the flowers. When this has occurred, we have found that the later summer shoots were quite sufficient to furnish the bed with flowering wood for the following season.

"Though, as we have just stated, the spring-blooming varieties of Clematis may be advantageously made use of whenever it is desired to have a flowering bed in May or June before the ordinary bedding plants come in, yet we wish it to be understood that, from many points of view, the summer and autumn-flowering hybrids, of which *C. Jackmanni* is the type, are the most suitable for bedding-out, especially by reason of their habit of profuse and continuous flowering.

"We have as yet only referred to the principal furnishing of the beds, either for spring or summer flowering; but in practice it is found that when Clematis beds are formed on grass, an edging of some kind, which may intervene between the deep rich hue of the Clematis and the green of the turf, is desirable. Plants with white or yellowish, or at least light-coloured foliage, seem to be most effective for this purpose. We have used the hoary *Stachys lanata*, the flowering stems being cut off as soon as they appear; but the habit of this plant, otherwise appropriate enough, is rather too flat to be fully effective. A better habit is that afforded by *Lonicera aureo-reticulata* when kept closely pruned, and the colour of this plant also forms a pleasing combination with its surroundings. The dwarf-growing variegated-leaved *Euonymus radicans*, the golden reticulately-marked *Vinca elegantissima*, and the neat *Buxus argentea nova*, are all useful plants, well adapted for edging the beds of Clematis, and very effective if kept closely pruned, and thus prevented from acquiring too much height. *Cineraria maritima*, a free-growing white-leaved plant, with finely-cut leaves, as well as some of its modern varieties, would be very suitable if kept constantly stopped back. The hoary *Senecio argentea*, *Achillea Clavenna*, *Artemisia Stelleriana*, and *Santolina incana*, again, might be advantageously selected, or the *Centaurea ragusina*, or *C. gymnocarpa*, if kept from flowering. In fact, any hardy free-growing dwarfish subjects, of which the leaves or sprigs stand erect and afford a pleasing contrast in colour, would, provided they were kept within due bounds by the timely use of the knife or pruning-scissors, be found efficient as edging plants.

"Mr. Fleming has recommended the introduction, here and there, in Clematis beds, of an upright or standard plant for the sake of affording variety of outline, and he suggests planting Clematis *Flammula* for this purpose. If kept symmetrically trained to a dome-like head, some 4 or 5 feet high, as it may be, or if trained up in a pyramidal form, and then allowed to drop down fountain-like, it would have a very good effect in large beds of the purple varieties, as would the equally fragrant *C. carulea odorata* planted in a bed of any of the pale-coloured kinds.

"Where basket-like edgings are adopted for beds in the flower garden, the Clematis might be usefully introduced as an edging plant, either as a supplement to the edgings of Ivy now sometimes used, or alone. When properly cared for, the summer-flowering hybrid varieties of Clematis make from 10 to 15 feet of growth in a season."

The work is elaborately illustrated both with well-executed wood engravings and lithographs, some of which are beautifully coloured.

The illustration which accompanies this article was obligingly lent us by the authors, and it only remains for us to say that we highly commend this well-written and exhaustive work to the attention of all lovers of this charming flower.

FIRST ICE HOUSE IN ENGLAND.—"Oct. 22nd, 1660. A snow house and an ice house made in St. James's Park, as the mode is in some parts in France and Italy and other hot countries, for to cool wines and other drinks for the summer season."—(Add. MSS. in Brit. Mus.)

THE FLAT PEACH OF CHINA is peculiar among the fruits of this species. It is as if pressed-in from the top and the bottom, so that the eye and the stalk come close together, the whole having the appearance of a ring of flesh with a stone in the middle. The colour of the skin is pale yellow, mottled with red on the side next the sun; the flesh of the same

colour, with a beautiful radiating circle of red surrounding the stone, and extending into the fruit.

A FEW NOTES MADE IN FRANCE.

On October 2nd, as I strolled into the garden of the Hotel de Ville at Rouen, which garden adds so much to the pictorial effect of the beautiful church of St. Ouen, I was much struck with the beauty of the sward, which I found to consist wholly of the small-leaved white Clover, forming a surface as smooth as velvet and green as it was possible to be. Going on, I noticed a raised device in several of the smaller lawns around the borders, which was so ingenious and effective that I took out my note-book, thinking it possible it might give an idea to some of the readers of the Journal. The device was that of the imperial fleur-de-lis, about 3 feet from point to point and 2 feet in its depth; the whole shape raised about 6 inches from the general lawn, carefully made, and kept with scrupulous neatness, the turf of which it was formed being as firm and smooth as if moulded in clay. At the points of the fleur were small round stones as if to receive pots of flowering plants, but none were there, and I could not find a gardener of whom to make the inquiry. This note-book may afford you some jottings by the way if worthy of reproduction.

In the neighbourhood of Boulogne no fruit trees are cultivated except the Pear. It is the speciality of the district. When roaming into the sequestered valleys away from the sea, Pear trees are seen in every garden large or small on the walls of all aspects. By the side of the walks they are always trained as pyramids, or, as we call them, French-trained—closely pruned, and never allowed to grow tall. Summer-pruning is evidently universal. I do not remember to have seen a standard tree. Apples and Plums are altogether wanting.

Another peculiarity of tree-culture struck me: All the forest trees when planted seem to have been pollarded. The leading shoot of 2 inches diameter had been cut off, so that to English eyes the beauty of the future tree seemed to have been permanently spoiled. There may be some local reason for this habit, but I could not guess what it might have been.

In the market of Boulogne the Pears most esteemed were the Louise Bonne, Beurré Diel, Duchesse d'Angoulême, and Catillac, besides some others of second quality and more abundant in quantity whose names I did not know. The same applied to the shops of Amiens, Rouen, and Havre. On the road to Abbeville nothing but the Poplar is to be seen, as is the case in the hedgerows around Boulogne. Why it should be so general is unaccountable, its wood is so useless, and fuel is so scarce.

The markets of these towns are largely supplied with white Grapes sent from Paris, but nowhere did I see any of the Black Hamburg, which in English markets is at this time of year the most abundant. These Grapes must have been ripened under glass, but had not received the same careful culture we give them. The vegetables in use were such as we are accustomed to, except that Turnips are less frequent. Lettuces are not seen, but Endive forms a most important item both in the gardens and at every table. Scorzonera, and a white root like it, were also abundant, they give flavour to the stews. Haricot Beans are on every stall. As you leave Amiens and approach Rouen (a most lovely ride, and that morning superlatively beautiful, as the sun gradually rose and illumined the landscape), Apples are everywhere to be seen. The trees are all standard, not often, as in England, collected into an orchard, but scattered everywhere over the fields whether in pasture or tillage. This is the centre of an extensive cider country. Cider is as often written over the doors of the estaminet as beer, brandy and liqueurs not being forgotten.

On the swampy country near Amiens in many fields were shocks of what appeared to be reed for thatching. On closer examination this could not be the crop, and I was puzzled till I learnt that these were sheaves of Hemp drying, a crop I had never seen. In some fields I noticed that they were stripping the seeds from the stalk by drawing each stem through a forked stick. The father sat on the ground, and rapidly thus stripped of their seeds the plants, which were handed to him by women and children, forming a very interesting rural group. A cart laden with Hemp just in from the fields, to the unaccustomed eye is fairly a puzzle.

The absence of rabbits from some lands peculiarly fitted for them, and the few to be seen in the ordinary markets, as well as the few pigs dead or alive, surprised me, as the poorer classes are on the look-out for food which would be rejected

with disgust by the same class in this country. One clever dodge to obtain fuel that otherwise was wasted is, I think, worthy of record. In the harbour there are pieces of wood floating about, to obtain some of which a boy urged with much address his dog into the water. To tempt him thither the boy threw stones; in the dog dashed, snapped up the wood which was the object of his master's wishes, received his well-earned praise, and again dashed in after another stone, which was always skilfully pitched near a piece of wood. At length, by the shrewdness of the boy and labours of the dog, an armful of wood was carried away, to the mutual satisfaction of man and beast.

In the country around Boulogne the smaller birds were as numerous and as varied as they are in our corresponding lands. On one occasion I saw a woman whose only article for sale was six starlings carefully plucked. I wonder what octroi she had to pay, for nothing so surprised me as the zeal with which this municipal tax is sought. I had to pay 7d. for taking into France four partridges; and everybody entering Havre from the opposite town, Honfleur, was carefully examined to see that he brought no Apples nor Pears without paying duty. This small town, Honfleur, is the great seat of egg-merchandise, the value of eggs imported into Southampton is marvellous.

Can any of your readers tell us what are the circumstances which give rise to councils and discussions among the sparrows? At certain times before roosting among their Ivy beds there will be a great clatter, but never did I hear such a chatter as amid a storm of wind and rain the sparrows made on the Bourse at Havre. It drowned every other sound. The talk of men was silence compared to their twitter.

The plan of tethering the cows to eat down the clover equally seems one quite worthy of imitation, as there is no loss of herbage, though doubtless not so agreeable to the cows, who enjoy lying about where they, not their masters, choose. The Normandy sheep are very picturesque, but are very poor when compared with the compact well-made horses and cows. I travelled with a most intelligent horse-dealer, who told me one man near Havre had imported English Southdown rams to improve his stock. This man yearly travelled through England to buy up all the good horses he could, and complained much of the increase of continental buyers, whereby the prices in England had so gone up.

The marvellously free growth of the Acacia struck me very much. For miles the embankments were covered with it—a dense bank of green, the saplings springing up more abundantly than Thistles by a neglected roadside. Though the land is very ferruginous I did not notice a plant of Heath of either kind, and but few patches of Gorse or of Bracken, till we approached Havre. This is a lesson how gardeners should study the nature of the soil and its fitness for certain plants if they wish their pets to thrive and look well. Near Southampton I noticed the same tendency of the Acacia to flourish and to cover large breadths of ground.

As you pass the gardens the number of the cloches struck me, as well as the careful way in which they were packed away—a thin layer of straw between each, that when nested they might not be cracked. Borders of the large yellow Pumpkin were everywhere to be seen, a vegetable we never use in common, whereas in these markets large slices, or halves or quarters, were everywhere for sale.

If any of your readers should be at Abbeville let them, if interested in such matters, visit the museum of M. Perthes, where there is a wonderful accumulation of genuine old cabinets, china of all kinds, but, above all, a marvellous collection of implements of the so-called stone age; Abbeville being the district most noted for these memorials of a bygone age.

In the garden at Rouen I noticed a most ingenious, and, I should presume, successful device in transplanting large trees. Around the bole of the trees there was sewn, running to the ground, a stiff canvas covering. This was filled with sand, forming a coating of about 4 inches. At the top of this canvas bag a large zinc funnel was fastened, whereby all the water that fell into the funnel was conveyed to the sand, keeping the bark of the trunk moist. This answered the purpose of the haybands which we use under the like circumstances, but it must be more effectual. On one tree I noticed that three of the funnels had been affixed to corresponding large branches, an amount of precaution few here would have taken. In the same garden was a very neat and most effective protection of the lawns from trespassing feet. Rods of iron thick as the little finger, with prominences to imitate natural branches, were interlaced in semicircles of about 15 inches diameter and

7 inches from the path, a margin of 2 inches being kept that the edges might be properly cut. The deception was so complete that I stooped down to learn of what tree these were twigs, the colour of the paint was so good. It is an idea worth remembering.

On several large beds the planting was very effective. In the middle was a line of dark Cannas surrounded by green Cannas. The next line was the dark nettle-leaved plant which is so commonly used (its name I forget), edged with a free-growing Composite plant with very divided leaves like the Wormwood, but it had no odour. As a foreigner I did not venture to pluck a leaf for your verification. This row was intermingled with the large blue Ageratum, having scarlet Geraniums next the grass. The whole formed for a large bed a most effective grouping. In the square at Havre one range of borders with a north aspect presented new features. The back row consisted of Rhododendrons, followed by the variegated *Veronica Hendersonii*; in front of which, part of the border was occupied by a Fuchsia with deep red leaves carefully pegged down, part with Ferns of various kinds; the remainder with Solanaceæ of different kinds—Wigandias four or five varieties, Tobacco, *Solanum Capsicastrum*, and one with very finely divided leaves. The group as a whole was most effective. Yuccas were planted around the orchestral platform. One of the squares had a row of Hickory trees around it, forming a good contrast with the Plane trees with which all the Boulevards are lined.

On the farms one instance of saving of labour struck me forcibly. The ploughs were driven by one man without a boy, the horses three abreast, so that there was no loss of traction. What English ploughman would manage three horses abreast? The local love of embellishing the horses, which is so marked in this region, was shown, for all the horses had the remains of what had been handsome harness. On another occasion I noticed a man driving a light plough two horses abreast, and he was followed by a gang of women, who planted what appeared to be the thinnings of Swedes. The season for planting Turnips of any kind is so far advanced that I mistrusted my conjecture, but could get near enough to test its truth.

In England near our country houses we are accustomed to let our trees assume their natural shape; but in the district under notice all the trees are carefully shrouded, so that instead of a handsome plantation of Beech or other trees, there are growing tall ungainly poles with a mop of small branches at the top. The reason for this unpicturesque culture is shown on looking at the extensive wood yards, where straight pieces for firewood are so much more useful and so much more easily packed away. The tenders for firewood at one of the hospitals were for Elm, Beech, and Oak, showing what trees are most common in the neighbourhood.—J. G. BARTUM.

NOTES AND GLEANINGS.

HORTICULTURAL SCHOOL.—Mr. McKenzie, superintendent of the garden of Alexandra Park, has been asked by the Company to arrange for a school of horticulture. They will appropriate twenty acres for a garden for the practical instruction of the pupils.

— We have received the announcement of a subscription for a TESTIMONIAL to be presented to Mr. P. Frost, on the completion of his fifty years' continuous service as gardener at Dropmore. There are few of the present generation who can remember when there was not a Frost at Dropmore, and there are equally few who will not hail this movement as a well-merited tribute to one who, we believe, has never lost a friend and never made an enemy. These honours—for honours they are—are not only gratifying to the fathers of gardening, but encouraging and stimulating to the young and aspiring; and we trust that the hopes of the influential Committee which has been formed to promote this laudable object will be crowned with success. We observe that Mr. J. Fleming, of Cliveden, and Mr. T. Moore, of Chelsea, are the Honorary Secretaries.

— In their examinations during 1873, the SOCIETY OF ARTS will include Floriculture, Fruit and Vegetable Culture. The programme will be issued as soon as possible. It will not differ materially from that for the present year. The papers for the elementary examination will be supplied as usual.

— A LETTER dated the 21st inst. says of the CROPS NEAR DURHAM, "We have rain every other day. Some corn is still out, and even uncut. Potatoes here, as elsewhere, are much diseased and a bad crop. Singular it is that there has not

been one field Mushroom seen in the north this year. I never knew this before."

— In the last nine months there were 1,571,429 bushels of ORANGES and LEMONS imported, and the value, as declared, was £791,257.

— It appears that in the nine months ended the 30th ult. the declared value of POTATOES imported was £452,549.

— We learn that the SWISS FRUIT TRADE has increased this year to enormous dimensions. The united Swiss railways are scarcely able to supply sufficient waggons for the masses of fruit which are deposited at the stations for transport to Germany.

— THE ancient gates of Constantinople, which endured the attacks of decay for more than 1100 years, were made of Cypress wood.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Now is a good time for thoroughly draining any part of the garden not hitherto done; to replant the Box and other edgings, or mend the gaps where it is not necessary to remove the whole; to prepare gravel, &c., for new walks and for repairing the old ones; to make any necessary alterations; and to thoroughly trench and drain the ground newly taken in, and every spare piece in the garden, choosing suitable weather for these operations. Care should be taken not to operate on close, retentive, badly-drained soils when full of water, which they will continue to be while heavy rains prevail. Broccoli that is now getting too luxuriant may be checked by laying. Some of the Cauliflower plants of suitable size and age should be potted and placed in Melon pits and frames, turf pits, or temporary pits made with a few stakes interwoven with evergreens, long Furze, Heath, Fern, or straw; they may then be covered when frost is likely to occur with Pea haulm, evergreen boughs, mats, or anything that is convenient laid on cross poles or sticks. A quantity may also be placed in a warm sheltered corner or border, and if taken up with balls of earth and sheltered as above recommended, both Cauliflowers and Cape Broccoli can be secured in succession through the winter until the early varieties of Broccoli come in naturally in the borders and quarters, thus securing a regular supply of these useful vegetables throughout the year. Warm dry borders and banks should be prepared for early Peas and Beans, so that time may be allowed for exposure to the influence of the atmosphere. Strong plants of Lettuce, of the hardy kinds, should now be planted in well-prepared, dry, warm ground, to stand the winter. Secure the supply of the best Red Cabbage for pickling while they are sound and good, after they have had sufficient frost to stay the natural colour. Small Onions, too, should be thought of for the same purpose while they are good. See that the Pea and Scarlet Runner sticks are securely tied in bundles stored away tidily, and thatched with reed, straw, or evergreen boughs. Prepare in wet weather straw mats, thatched hurdles, &c., and have Russian mats in readiness for use. Hoe and stir the soil amongst all growing crops in suitable weather, and collect all dead and decaying leaves. Those who have still spare ground should continue to put out Coleworts and other Cabbages; and if any strong plants of Savoys, or the varieties of Kale, should be left in the seed-beds, by all means put them out thickly—say at Colewort distances. Those who are fond of Turnip greens at an early season, if they have any overgrown bulbs left in their beds, should at once collect them and plant them 1 foot apart on warm borders, quarters, or sloping banks; if they have no Turnips of their own, they should procure a few from the nearest farm, for all kinds of greens will be found useful in the spring on account of the Potato failure; if not wanted they can be trenched in for manure.

FRUIT GARDEN.

Be careful in collecting the late varieties of Pears; they do not come evenly to the proper condition to collect, but ripen in small patches, while others on adjoining branches cling firmly, and in some cases are not in a fit condition to gather for several days. The Medlars and Quinces should be collected in good condition. Those that have sweated should be well cleansed by being placed in a dry sack and shaken by two persons from end to end, the friction will clean them perfectly, when they may be stored. Pruning may now be commenced, beginning first with the Currants, and following with Gooseberries and Raspberries; this will clear a good deal of ground, to be dressed and dug in fine weather. Next prune Apple and Pear trees; then look over the walls, and cut away useless laterals and late growths on the Peach trees; indeed, any shoots you think will not be wanted in the spring had better be cut out at once to make more room for the others, and let in the sun and air to ripen the bearing wood for next year. The leaves of Peach trees are of very little use after this time, and they do much harm by shading the wood; you may therefore take your knife

and cut them off by handfuls, but do not strip them off for fear of injuring the buds.

FLOWER GARDEN.

Use all diligence in pushing forward any alterations required. Proceed with laying turf and the removal of shrubs. Lengthy discussions and conflicting opinions as to the proper time for transplanting Hollies and other things have frequently occupied the columns of our gardening periodicals, but I hold that there is nothing sounder in practice or more valid in theory than early autumn planting. The uniformly moist atmosphere in October and November, and the general exemption of these months from severe frosts and drying winds, are circumstances too favourable to the crippled energies of large evergreen or deciduous trees under removal to be overlooked by those who would succeed; therefore, those who intend alterations should proceed at once. The condition of the autumn-struck cuttings should be ascertained, and whenever indications of damping appear, remove the pots to drier quarters. Give air liberally to young plants in pits and frames. Scarlet and bedding-out Geraniums should be kept in houses where fires can occasionally be lighted, by which they will grow gently through the winter. As the vineries are cleared of Grapes fill them, unless they are otherwise occupied, with the more choice plants, reserving the pits and frames for the Calceolarias, Lobelias, and similar plants, which do not suffer so much from cold and damp. As soon as the greater part of the leaves are off the trees, let the pleasure ground be thoroughly cleaned and swept. The leaves, if of sufficient quantity, should be stacked up for forcing purposes, covering borders, and the like. Such parts of the lawn as are contiguous to the house should be swept daily to remove leaves and wormcasts, and the gravel walks should be frequently rolled to preserve a smooth surface. The present is a good time for re-arranging the herbaceous ground, which is rendered necessary every two or three years by many of the free-growing plants becoming too large. Let the borders have a dressing of well-rotted cow dung before replanting.

GREENHOUSE AND CONSERVATORY.

Cuttings of Pelargoniums that are now thoroughly rooted should be immediately potted-off, so that they may be well established in their pots previous to the approach of winter. Those who flower their Pelargoniums late in the season, and, consequently, propagate late, will find it preferable to the disadvantage of late potting, to leave the cuttings in the store pots until early in spring, placing them on the shelf near the glass, where they can have plenty of air on all favourable occasions, and no more water than is absolutely necessary to keep them in health. A few of the strongest of the Cinerarias should now be shifted and encouraged to grow freely. They will be found useful in the conservatory early in the spring. Place Chrysanthemums under glass, and finish potting Dutch bulbs, &c.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

We continued to partially earth-up Celery as lately referred to, and looked over banks, or rather ridges, of Lettuces, in order to make-up deficiencies; also, with the same object, the plantation of Cabbages for spring use. Few plants in either case have gone wrong this season from the attacks of slugs, grubs, or wireworms. The constant scuffling with the hoe and moving are good deterrents, but one year we lost large numbers of Cabbages from the grub of daddy-longlegs, and there was just as much scuffling and hoeing then as now. Strange to say, we have often been less troubled with grubs, snails, and similar enemies after a mild winter than after one in which there was severe frost.

We planted two rows of Lettuces, a Brown and a White Cos, in the front of a late orchard house, in which little is left but Plums. Close to the fruit is a row of Parsley, and the Lettuces are behind it. In a severe winter the Parsley is invaluable, and the Lettuces come in early in spring, after those protected in frames are over, and before those on south banks and ridges come in. If at any period a nice crisp Lettuce is a luxury, it is in the early spring months.

Cauliflowers.—Those coming into use are still fine, and if the weather be open the others will continue so. If it be otherwise, we must protect and take up. Young plants under hand-lights planted as previously referred to, are all secure, but as there were trails of slugs we scattered ashes and quicklime over the ground outside. We shall try to find a frame empty ere long, and will fill it with stubby plants to turn out in the spring. Even Cabbages, if pricked out now, will make better successions when planted out in spring than if left standing in the seed-bed.

We cleared-off Rhubarb, Sea-kale, &c., preparatory to forcing, and cleaned Mushroom-beds, putting a slight covering of dry hay and litter over those from which we wished to gather ere long, as our first bed in the house, though bearing well, does not produce a basketful every day. Gathered a lot of Vegetable

Marrows, as we wanted the space, and they will keep a good while in a cool place.

In the wet days we were busy making tallies, washing pots, and cleaning and washing houses intended for plants. We have a new potting shed, with a boiler in connection with the water-receiver, so that hot water or cold water can be supplied at pleasure. Washing pots becomes quite a comfort in a wet cold day when warm water is used. One advantage of the hot water is that the pots dry so much sooner than when cold water is used. For pots that are to be plunged it is of little use to take much pains with the outside, but the inside should be scrupulously cleaned. It is next to impossible to take a ball clean out of a pot if, at the time of repotting, that pot was dirty, had some encrustations of soil inside, or was even wet from the tub. One secret of success with pot plants is using thoroughly clean pots. If clean, a pot, however old, is just as good as one fresh from the kiln. For some purposes it is better, as for tender particular plants it is well that new pots should be soaked in water and dried previous to use. New pots used at once are apt to absorb too much moisture from the soil, and thus leave a space between the soil and the pot, through which the water passes too freely without penetrating the ball of earth.

FRUIT GARDEN.

We have pruned the Vines in a vinery, and thoroughly washed the woodwork, glass, and stages with hot soap water. As there had been plants of Coleus in it, and some mealy bug had appeared, we scraped off the surface soil to the depth of nearly an inch, and watered all over with water as near the boiling point as possible, using a rose, so that the water would sink from half an inch to an inch in depth, and thus destroy any eggs that there might be. The Vines were well scrubbed with stronger soap water. Our experience leads us to place much reliance on hot water for getting into every hole and crevice, and though nearly at the boiling point, it is much reduced in temperature before it reaches stems or twigs when applied by a syringe or otherwise, and we have never found that thus applied to deciduous trees when dormant it ever did any harm to twigs, shoots, or buds.

A Peach house, which we shall prune shortly and clean, so as to fill every available inch with bedding and other plants that are receiving temporary protection out of doors, has undergone the first process of cleaning by copiously syringing wall trees, woodwork, glass, &c., with water as hot as a man can put on with the syringe, using a stout cloth round the syringe where it is held with the left hand. Warm water with half an ounce of soft soap to the gallon, is one of the best protectors from legions of insects. A small copper is therefore valuable in a garden. For home-made manure water it is also useful, as all the eggs and larvæ in the droppings of the sheep, horse, cow, and other animals can by its use be destroyed, and, therefore, the manure water thus made is purer and safer than when the droppings are merely soaked in cold water.

Proceeded with pruning as the weather would permit, and cleared out the superfluous and weaker shoots of Raspberries. This ought to have been done earlier, as in all our experience we never saw the shoots so green at this season. We fear that owing to the dull and dripping autumn the wood of many fruit trees where there was anything like free growth, will be imperfectly matured. In this respect we feel sure there will be a difference next season in cases where free growth has been permitted, and especially in the case of those pyramidal and dwarf trees that owing to high planting and summer-pinching have been allowed to make but very moderate growth.

We looked over the fruit-room frequently, and removed all fruit that was decaying. Though this season our crop on the whole was deficient, yet the samples are fair, and we never knew Apples and Pears keep so well. What we have lost is a mere nothing. Apples, though a little spotted, can be used for kitchen purposes, though they would scarcely be tolerated in seasons when they were abundant.

In such dull moist weather late Grapes should be frequently looked over. As yet we have not had a dozen decayed berries, but one allowed to remain will soon destroy a bunch. A little fire heat and plenty of air during the day, keeping the atmosphere dry from having few or no plants in pots, greatly contribute to sound and good keeping. Except in severe frosts, there ought always to be a little air at the back or top of the house at night. We dare not open our front lights, otherwise we should have four-footed intruders that would do more injury than damp.—R. F.

TRADE CATALOGUES RECEIVED.

W. Paul, Waltham Cross, London, N.—*Descriptive Catalogue of Hardy Ornamental Trees and Shrubs.*

Charles Turner, Royal Nurseries, Slough.—*Catalogue of Roses, Fruit Trees, Coniferæ, Shrubs, &c.*

A. C. Wilkin, Tiptree, Kelvedon, Essex.—*List of Forest Trees, Shrubs, Apples, Pears, &c.*

J. Harrison, Darlington.—*Descriptive Catalogue of Fruit Trees, Ornamental Trees and Shrubs.*

W. Chater, Saffron Walden.—*Catalogue of Hollyhocks and Roses.*

TO CORRESPONDENTS.

N.B.—Many questions must remain unanswered until next week.

ADDRESS (*M. Chapman*).—We do not know the address, but our correspondent knows about the shelter you name.

GARDENERS WITHOUT CHILDREN (*Lover of Morality, F. K., Selfish, and Others*).—We must decline inserting more on the subject, and will only add, Let every one consider both sides of the question.

WEIGHING FRUIT AT SHOWS (*R. B.*).—Avoirdupois weights are employed—16 ozs. to the pound.

PRUNING PEACH AND PLUM TREES (*Amateur*).—You may cut back the strong shoots on your Plum trees now, but defer the pruning of the Peach trees until spring, when the buds swell. You will then be able to prune to a leaf-bud.

EMPLOYMENT IN A NURSERY (*Anxious*).—Write to two or three of the principal nurserymen and florists near London, and state to each what you have stated to us.

BUFF-COLOURED BRICK WALL (*W. D.*).—If the wall is not to be protected by glass, we should prefer this colour of wall to one which is darker.

REMOVING GREENHOUSE (*A Sub.*).—We think that if the woodwork is screwed on to the plates, you may take the woodwork away as well as the sashes.

TRANSPLANTING GOOSEBERRY AND CURRANT BUSHES (*Amateur, Dewsbury*).—If the bushes are not very old you may remove them quite safely; but if otherwise, though they will grow they do not succeed so well as younger plants, and in this case we should advise you to plant young bushes at the required distance from the walk. If they are not more than eight or ten years old we should now take out the soil all round the bushes at about 2 feet from the stems to a full spade's depth, then remove the loose soil over the roots, and with the spade work round the ball towards the stem, and when the spade is beneath the latter press the handle downwards, which will, of course, raise the ball. In this way proceed until you have loosened the roots and are able to remove the bush with a good ball of soil, then plant no deeper than before. If you have some well-decomposed manure, after covering the roots to the depth of an inch or two with soil, spread round each bush from four to half a dozen spadeful of the manure, then cover with soil, and tread gently. Any pruning they require should be done, thinning out the shoots well, especially the old branches, leaving the young shoots well disposed for forming main branches. Cut off the side shoots in the usual way. Mulch over the roots with any littersy manure at command. The end of March and beginning of April are the best times to remove Hollyhocks, but this may be done now if the crowns of the plants be afterwards protected.

PRUNING FRUIT TREES (*M. Henderson*).—You may prune your fruit trees at once.

LIFTING AND REPLANTING VINE ROOTS (*Amateur*).—We advise you to lift the roots at once, and replant in fresh compost. You might try a few Vines on the bush system, though we do not think you will be very successful. Royal Muscadine is a good variety to grow. In exceptional cases late blossoms will be produced on fruit trees; probably lifting and replanting the tree would prevent it.

LIFTING THE ROOTS OF LADY DOWNE'S VINES IN BEARING (*B. G.*).—If your Vines are planted inside and the roots are allowed to grow outside in the usual way, we should renew the outside border first (it may be done now); the inside border could be renewed next season. Remove all the old material of the border up to within 3 feet of the stems of the Vines, and lay the roots out near the surface in the fresh compost. You will not fail to obtain a crop of Grapes every year.

VINES FOR A VINERY (*H. T. H.*).—Your house, 18 feet long, will take four Vines. Plant Black Hamburgh, Madresfield Court, Buckland Sweetwater, and White Muscadine. These will all do in a cool house. Now is a good time to transplant Roses. The best white Grape is Muscat of Alexandria, but it would not succeed in your house.

PRUNING VINES (*Amateur*).—Cut-back the long side shoots to two eyes, and the leading shoot to 3 feet; or, as your Vines are very strong, to within 4 feet of its origin. You will need to bend this part of the cane down before the eyes begin to swell, to ensure the eyes breaking regularly.

VINCA ROSEA AFTER FLOWERING (*Idem*).—Keep the plant rather dry from the present time till February; then cut it in rather closely, and do not repeat until it has made fresh shoots an inch or two long. Encourage the formation of fresh roots by affording a gentle bottom heat and promote free growth by a moist brisk heat, shading for a few days until it has recovered from the potting. It loses the old leaves at this season, and most if not all of them during the winter. It is a stove plant requiring a winter temperature of 55° by night, and 65° by day.

PRUNING FUCHSIAS (*Idem*).—The pruning, or trimming to shape, should not be done until February; up to that time keep them cool, dry, and safe from frost, but not so dry as to cause the wood to dry up. Early in March they may be turned out of the pots, the old soil removed from the roots, and placed in pots that will just hold the roots. Use a compost of light turfy loam two parts, one part leaf soil, and half a part of old cow dung, with a sixth of sharp sand, and afford good drainage. They will need to be shifted into their blooming pots when they have made good roots in their first pots.

TRANSPLANTING ROSES (*Idem*).—The best time to transplant standard and all description of Roses, except the tender Tea-scented kinds, is November. You may move *Maréchal Niel* at the same time to a position against a wall; if in the open ground it should be protected in severe weather. Mulch well with litter over the roots after moving.

TILLANDSIA CULTURE (*Idem*).—All the Tillandsias are stove plants requiring a winter temperature of 55° to 60°. Your plant would probably survive in a greenhouse if kept very dry, but then you will need to give a stove heat in summer so that a good growth may be perfected.

WINTERING LOBELIAS (*Idem*).—Take up the plants, cut off the greater parts which are flowering or have flowered. Secure to each plant a moderate-sized ball. Place them in a pit or house safe from frost, and give no more water than enough to keep them fresh. Pot in light soil. Four, or at most 5-inch pots are large enough.

VINE PRUNING (*A Constant Reader*).—Your specimen of Vine pruning is correct. Cut above the eye as in the specimen sent. The young wood ought to be removed, leaving one or two good eyes at the base of the shoot.

SIEVE AND HALF SIEVE MEASURES (*Poma*).—The *Half Sieve* contains three and a half imperial gallons. It averages 12½ inches in diameter, and 6 inches in depth. *Sieve*.—Contains seven imperial gallons. Diameter 15 inches, depth 8 inches. A sieve of Peas is equal to one bushel; a sieve of Currants twenty quarts.

GUERNSEY AND BELLADONNA LILIES AFTER FLOWERING (*Florence*).—Set the pots on pans filled with sand kept always wet, on shelves in the greenhouse, or in a pit safe from frost, and give plenty of water until the leaves begin to turn yellow, then withhold it. In summer keep the sand in the pans wet. Strong yellow loam is the most suitable soil.

CAMELLIA LEAVES BROWNED (*Idem*).—The leaves you sent us are not infested with insects, but they are browned on the upper surface, owing, we think, to exposure to the powerful rays of the sun, from which Camellias should be shaded. We advise you to remove the surface soil down to the roots, but be careful not to injure them, and top-dress with rich light loam and old cow dung in equal parts. At every alternate watering apply weak liquid manure, and have the leaves sponged with a solution of 3 ozs. of soft soap to a gallon of water made as hot as the hand can well bear.

CAMELLIA CULTURE (*T. B. B.*).—At all seasons they require to have the soil moist, never dry, and when they are growing water liberally; good supplies should also be given when they are swelling and expanding the buds. The chief causes of the buds falling are an imperfect root-action inducing unhealthy growth, and a saturated condition of the soil occasioned by bad drainage, or too heavy and frequent watering when none is needed. A temperature of 40° to 45° is needed in winter, and when expanding the flowers the heat may be 45° to 50°; the latter is the maximum temperature needed from fire heat at any stage of their growth. Our "In-door Gardening" gives instructions for the cultivation of Camellias. It may be had free by post from our office for 1s. 7d.

PRESERVING GERANIUMS THROUGH THE WINTER (*W. S.*).—You ask for the best method of preserving these during the winter. Without any pretence to ours being the best, we give it for what it is worth; with us good plants at planting time result from it. Now that we are taking up the plants, they are stripped of all but the young leaves, the roots trimmed in a little, merely cutting away the long straggling parts, and placed in pots that will just hold the roots. Soil two parts turfy loam, light rather than heavy, and one part leaf soil or very old manure, adding a sixth of sharp sand. They are placed in pits or on a lattice stage about 18 inches from the glass, and are watered so as to keep the soil moist; but no water is given until they become dry, and then a good supply is afforded. The temperature is kept at 45°, though in cold weather it may fall to 40°. Abundance of air is admitted whenever the weather permits. Early in March we take what cuttings we can, pot them singly in 3-inch pots, place them in a gentle heat, and they soon strike. When rooted they are stopped, and if grown in frames they make good plants by planting-out time. By this means the plants are freed of their straggling growths early in March, and they are shifted into pots a size larger, or 6-inch pots, being in the first instance placed in 4-inch or 4½-inch pots; and the compost is the same, with the addition of half a part of well-decayed manure. They are returned to the pit, have water as required, and about the middle of April the point of any shoot growing irregularly is pinched out. This causes the plants to grow more compactly. The chief point after this is to admit air freely, withdrawing the lights whenever the temperature out of doors is above 45°, and only using them to keep the temperature inside the pit from falling below that. The consequence is, when they are put out they are strong, compact, and hardy, and show no check after being placed in the beds at the end of May, or, if cold, in June.

TECOMA JASMINOIDES NOT FLOWERING (*Florentine*).—You may plant it out now in a conservatory border well drained, in a compost of two parts fibrous loam, one part sandy peat, one part leaf soil, and half a part sharp sand; the loam and peat chopped-up rather small, and the whole well mixed. In spring it will grow freely, and should be encouraged with copious supplies of water and frequent syringings, which should be continued up to September; then reduce the supply, but do not allow the leaves to flag. Train the shoots 9 inches to a foot from the glass, and in pruning cut out the old wood. The shoots should not be allowed to become too crowded, then thin out where they are disposed to grow too thickly.

GROWING CUCUMBERS IN WINTER (*N. F. H.*).—The plants should not be stopped until they have reached the trellis and can be secured to it, then stop them so as to produce shoots for covering the trellis, and these should be stopped one joint beyond the fruit repeatedly throughout their growth. We think you have, in the "Garden Manual," mistaken "salt" for soft water, with which the plants should be watered until February, bringing it to the temperature of the bed by adding a proper quantity of warm water. After February they may be watered once a week with 1 oz. of guano to a gallon of water, or one peck sheep's droppings to thirty gallons of water.

USES OF HORTICULTURAL HOUSES (*Subscriber*).—We do not see how you could better utilise your stove house than by devoting the centre bed to the growth of the Pine Apple, and the side stages to Vines in pots. The latter will only do for one year's fruiting, so that you will need to raise or purchase a fresh set of plants annually. If you think pot Vines too troublesome you could have the Vines planted out, but not nearer than 4 feet, and as you must have the border outside, we do not think you can hope for any great result from these, though we have seen them good. You could have the border made now, but we should not advise you to plant the Vines until they had begun to grow. You will need to arrange so that the rods can be taken out of the house in winter and introduced when you wish to start them. You may procure the Pines at once. By the latter arrangement you will be able to retain the climbers on the back wall, and the plants on the side stages. In your other house already occupied with Vines, we do not see that you have room for much. In the pit you may plunge Fig trees in pots, and have Figs on the back wall as well. We would start the Vines at the beginning of March so as to have the fruit ripe in July, and the Black Hamburghs will keep sound up to October, when, your other house being in bearing, you will have the fruit of the Vines in the stove. As these are Muscats the Grapes will hang until late, or you can cut them and keep them in water. For further particulars of treatment you are referred to the "Vine Manual," and "Pine Apple Manual," to be had from our office, by post, 2s. 7½d. each.

MAIZE (*F. Richards*).—The time to sow Maize is in the first or second week of May. Any good garden soil will do for the purpose, but in fresh soil the plant grows much more luxuriantly. Draw drills as for Peas, and sow the seed thinly; when up, thin the plants to 18 inches apart.

PEARS NOT RIPENING (Alpha).—If your Pear is *Beurré Diel* it will ripen in December. Some varieties do not ripen well this year with us. *Beurré Bosc* used to ripen with us in October, but to get it in this year we have placed some of the fruit in a Pine house with a temperature of from 60° to 65°; the fruit is there ripening well. If you place yours in a warm room it will probably ripen. That is the only way we know of.

INARCHING VINES, DRESSING VINE BORDER (R. S.).—Inarching is better than budding or grafting. It is the surest method and most easily performed. Join young wood to young wood when it is green, cut a slice of each shoot to half its diameter, and tie the two together firmly with a strip of matting. The two shoots should be fastened together both above and below the union. In three weeks under the fastenings and tie another strip of matting round a little more loosely: the two edges must fit together, at least on one side. Budding may also be performed. We obtained a bud of a variety we wished to grow in October last year, it was sent several hundreds of miles, and was at once inserted in a young shoot of *Muscad* of Alexandria, and this year it has made a strong growth. You must take some of the wood with the bud and fix it in neatly, tying it round with matting, and covering over with grafting-wax. It is best to bud or graft on the young wood. We would not use lime pure and simple, nor plaster of Paris to dress a Vine border. Lime rubbish is a good thing to mix in, as it keeps the border open. The dressing should be applied in autumn.

NECTARINES FOR A COOL HOUSE (Nectarine).—*Victoria*, *Violette Hâtive*, *Albert*, and *Balgowan*. These will all succeed well, and are very choice varieties.

SCREEN OF CONIFERS (Conifer).—As the length is 80 feet you will need twenty plants; and as you wish for the best only, we name for the back row, as they will not be seen to their base, *Pinus Laricio* and *Pinus austriaca* alternately, planted 8 feet apart, with a common Holly between each pair, so that for the back row you will need nine Hollies, and five of each of the Pines. In the next row, 8 feet from the back row, and opposite the Holly, plant *Abies Douglasii*, *Wellingtonia gigantea*, and *Thuja Lobbi*, in equal numbers at 8 feet apart. In the third row, at 8 feet from the last plant, *Picea Nordmanniana*, *P. grandis*, *P. nobilis*, *P. pinsapo*, *Cedrus Deodara*, *Cupressus Lawsoniana*, *Retinospora pisifera*, *Thujaopsis borealis*, and *Thuja orientalis*, employing these where you have the greatest width; and at the narrow parts towards the ends *Thuja elegantissima*, *Taxus adpressa*, *T. elegantissima*, *Abies Clan-brasiliana*, *A. pygmaea*, *A. compacta*, and *A. pumila*. The whole of the internal space we should fill up with common Laurel, which can be removed as the Conifers grow, making them throughout 4 feet apart, but the Conifers will stand 8 feet apart every way. The front you can fill up with any of the low-growing shrubs, as *Juniperus Sabina*, *J. prostrata*, *Vinca elegantissima*, *Skimmia japonica*, *Berberis Aquifolium*, &c. Now is the time to plant them; the ground, however, should be well trenched.

PEARS FOR WEST WALL (Idem).—We presume you want them to succeed each other. *Beurré Superfin*, *Marie Louise*, *General Todtleben*, *Beurré Diel*, *Josephine de Malines*, and *Bergamotte d'Espéran*.

PASSIFLORAS FOR GREENHOUSE (I. D.).—We do not know any scarlet-flowered *Passifloras* that will succeed in a greenhouse, but *Countess Nesselrode* has reddish purple flowers. *P. kermesina* might probably succeed. We would especially recommend *Tasconia Van-Volxemi*; with us it is always flowering. The flowers are bright crimson.

TASCONIA, MANDEVILLA, AND LAPAGERIA IN COLD CONSERVATORY (H. F. F.).—As the temperature of your house sometimes falls below 32° keep the plants dry at the roots, giving no more water than is absolutely necessary. The *Tasconia* and *Lapageria* are known to endure several degrees of frost without injury, and yet we should advise you to cover them in severe weather with mats, which should not be removed as long as the temperature is below 32°, and not after a change of weather until the plants are thoroughly thawed. *Tritoma grandis* is quite hardy, but it is well to mulch round the crown after November with partially-decayed leaves and short manure, placing a mat over all in severe weather, and not removing the dead parts until spring.

VIOLA QUEEN VICTORIA (H. Cannell).—Your Viola is lovely. At this season of the year, when colours in the flower garden are becoming rare, and the gaudy show is past, its charming violet tint cannot but be admired by all lovers of a flower garden.

POINSETTIA PULCHERRIMA TREATMENT (Box).—This plant should have a temperature of 55° to 60° from fire heat, and be kept in a light airy position near the glass. Water should be given to keep the soil moist. For particulars of treatment throughout the year see page 224 of JOURNAL OF HORTICULTURE for September 19th this year.

USES OF TAN (Idem).—The only way is to form it into a bed of about the same height and dimensions as if you were using well-fermented dung. The sides will need to be held up by litter, and from your pony you will probably have enough for that purpose. Any kind of litter will do, or you may employ faggots; the object is to keep the tan from falling. The tan if fresh should be thrown into a heap, and allowed to attain a good heat before being used for forming the bed.

CHRYSANTHEMUM STAKES—MANURING ROSES—TUBEROSES NOT FLOWERING (S. P. S. K.).—The stakes for the *Chrysanthemums* would be much improved if you were to have them painted green. Now is a good time to manure Rose beds; put on rather littery manure, and in spring point it in with a fork. This is also a good time to plant *Liliums* in the open ground, well drained. We are unable to account for not more than two *Tuberoses* out of half a dozen flowering. Probably the tubers were too weak, like the majority of those we have grown for many years. The American roots are considered finer than the Italian.

LAUREL LEAVES FOR DESTROYING GREEN FLY—LOBELIA NOT FLOWERING CONTINUOUSLY (Idem).—Laurel leaves are destructive to insects because they evolve prussic acid. Cover the floor of a house with them, shut it up closely in the afternoon, gather them up in the morning, and well syringe the plants. A decoction of the bruised leaves is also useful for syringing plants infested with green fly, using as much water as will just cover the leaves. Pour boiling water over them, cover, and allow the liquid to cool, then apply it with a syringe. *Lobelia pumila grandiflora* blooms continuously until frost, and we can only account for your plants not doing so by the heavy rains, and the plants coming into flower so early in the season. The growth of the plants should be encouraged, and the flowers pinched off so as to keep them free in growth, and only showing for flower at planting-out time. It is not unusual for *Cinerarias* to flower in October.

GREENHOUSE VENTILATION (A Lover of Flowers).—The temperature of a greenhouse should not exceed 45° by fire heat, nor be less than 40°; the former being the day, and the latter the night temperature. Gentle fire heat in

mild wet weather is often desirable to cause a circulation of air, but it should not be given with the view of raising the temperature. There cannot be too much ventilation in mild weather, and a little air should be given daily except in severe weather, but without lowering the temperature. In order to prevent too high a temperature from sun heat, air should be given early in the day, reduced by the time the temperature falls to 50°, and entirely withdrawn at 45°.

CHARCOAL STOVE IN GREENHOUSE (L. A. P.).—A charcoal stove will injure the plants in a greenhouse, unless you have a small chimney to take off the products of combustion. We know what effects a close charcoal stove has had on men, and plants are even more tender. We have known great destruction caused by using gas-burners, and they are not worse than charcoal.

FLUED STOVE (E. G. G.).—In such a small house (9 feet by 6 feet), the one stove (9 inches by 7 inches), would be quite sufficient to keep the frost out. The mere keeping-in of the fire, if there be enough of heat, will be of less consequence. The keeping the fire in will depend on a close-fitting furnace-door and a close ashpit-door; a slight opening in the latter, say 1 inch by one-eighth of an inch, will keep-up the combustion. The close fitting of the latter is of importance, as the smoke-pipe goes up from the top of the stove. As you would see in previous numbers, we prefer that the smoke-pipe should issue from the side and that the firebox should be lined with firebricks, and stand separate from the sides of the stove.

AMMONIACAL SOLUTION FOR DIPPING PLANTS (C. J. W.).—Half an ounce of sulphate of ammonia is a sufficient quantity for one gallon, and this should not be given oftener than twice a-week. At the same rate any of the ammoniacal salts would probably answer for dipping and syringing plants, but we should be obliged by information on the subject.

DESTROYING SLUGS (Amateur, Deunbury).—In the flower garden, before planting, we should dress with salt at the rate of one peck to 80 square yards. In the spring we should point lime into the flower borders, and if slugs are troublesome dress with it late in the evenings of showery days. Any unsightliness will soon disappear by hoeing and raking. You may also dress with nitrate of soda, 1 lb. to 80 square yards. It destroys slugs, and is beneficial to most plants. In the kitchen garden we should apply the dressing of lime as you propose, and dust the growing crops with lime if the slugs should prove troublesome. You may also dress with salt, which is beneficial to plants and destroys slugs. The Celery we should water with nitrate of soda, 1 lb. to twelve gallons of water, and also dust with soot before each earthing-up.

RED SPIDER ON VINES (H. B.).—At this advanced period of the season you need not trouble about your greenhouse Vines infested with red spider, further than to remove the leaves as they fall, and to burn them. When the leaves are all off remove the loose portions of the bark, and when the Vines are pruned dress them with a composition formed of 8 ozs. of soft soap and one gallon of tobacco juice, adding sufficient sulphur vivum to bring the composition to the consistency of paint. Apply this with a brush to every part of the wood, working it well into the holes and crevices, and taking care not to rub off the eyes. It should be applied at a temperature of 120°. We should wash the canes previous to this application with water and a brush, then apply the composition. The temperature from fire heat in your greenhouse ought not to exceed 45°, and should not fall below 38° to insure the safety of the plants. 40° to 45° from fire heat will suit the plants and not unduly excite the Vines. The temperature may rise to 50° or more from sun heat, but the fire heat at such times should be kept at a minimum. During the winter it is not necessary to apply manure water to any plants in a state of rest or when the growth is not active, but such as are advancing for flowering will be the better of weak liquid manure once a-week when the pots are full of roots. Our "In-door Gardening" will suit you. It may be had free by post from our office for 1s. 7½d.

NAMES OF FRUITS (D. F. J. K.).—Your Pear is certainly not worth a south wall. The cracking and imperfect ripening are caused by the roots being in ungenial soil. It is so poor a specimen we cannot determine the name. (*Centurion*).—1, Worthless, certainly not *Cellini*; 2, *Dredge's Fame*; 3, *Winter Nelis*; 4, Certainly not *Beurré Bachelier*; 5, *Beurré d'Arenberg*; 6, *Inferior specimen*; 7, *Red Doyenné*; 8 and 9, *General Todtleben*.

NAMES OF PLANTS (T. Hill).—*Lasthenia californica* and *Cheiranthus Marshalli*. (*S. S.*).—*Croton variegatum*. (*Pinetum*).—1, 4, 5, *Abies Menziesii*; 2, *Taxus baccata elegantissima*; 3, *Thujaopsis borealis*; 7, *Taxus baccata adpressa*; 8, *Pinus lasiocarpa*; 9, *Pinus excelsa*; 10, *Abies orientalis*. (*H. W. D.*).—2, *Juniperus virginiana*; 1, *Chamaecyparis Lawsoniana*; and 3, *C. spheroides*, apparently; but specimens not very satisfactory. (*E. Payne*).—3, *Pellaea hastata*, var. *macrophylla*. (*Constant Reader*).—Sedum spectabile. (*E. Maries*).—*Wulfenia carinthiaca variegata*. (*E. R. Llanfair*).—1, *Asplenium dimorphum*; 2, *Nephrodium decursivo-pinnatum*; 3, *N. (Lastrea) Thelypteris*; 4, *N. (Lastrea) Filix-mas*.

POULTRY, BEE, AND PIGEON CHRONICLE.

RETURNING FOWLS FROM A SHOW.

In calling attention to the treatment my birds experienced at Croydon Show, I do so in the hope it will be the means of preventing a recurrence of the serious injury which may be inflicted on very valuable birds, owing to want of a little attention and of the employment of experienced and responsible persons in and about a show, particularly a first one.

Although I am situated nearly on a direct line of the London and North-Western Railway, my birds did not arrive home till three days after the Show closed, and when they did arrive the cockerel was put in the small pullet hamper, and, *vice versa*, the pullets in the tall cockerel hamper (without, of course, the least regard to numbers); consequently the cockerel during the three days' journey had never been able to stand up, and as may be imagined, was so cramped and hardly to be able to stand. I heartily wish this had been all, but one of the very splendid pullets was so injured either by rough handling in penning or by a blow on the head or neck, that it will take some time for her

to overcome the injury, if she ever do. Have we another illustration here of the "foighting" scene described by Mr. Hewitt in the last number of Wright's "Book of Poultry?" Of course, valuable birds being so long on a journey will cause some anxiety to their owners, and if the Secretary had replied to telegrams, much expense and anxiety would have been prevented, and it was only by making free use of telegrams that I succeeded in getting my birds fed and finding their whereabouts. I believe mine is no solitary case. Two days after the Show closed, after writing twice for them, a catalogue and prize list arrived, ten days after that two more. Honorary secretaries, no doubt, have very onerous and thankless duties to perform, and it is to be hoped the experience of the past will be a lesson for the future.—E. TUDMAN.

IPSWICH POULTRY SHOW.

THE seventh annual Show at Ipswich took place on the 16th inst. and two following days, and though the entries were not so numerous as they have been on some former occasions, the quality of the birds manifested improvement rather than deterioration of quality. The weather on the day of opening was as adverse as could be well imagined, for incessant rain and dense fog marked the whole of the morning, and the still threatening aspect of the afternoon no doubt caused many would-be visitors to absent themselves altogether.

Of *Cochins*, the entry was of the highest possible character, Lady Gwydyr and Mr. Henry Lingwood exhibiting their choicest specimens in admirable condition. The first-prize Buff pullet is certainly one of the largest and best in all points that has been exhibited for some time. Lady Gwydyr's cup cockerel is also a glorious bird in style and colour, but wants size. Mr. J. K. Fowler's Partridge cockerel, the winner of the second prize, will be a superior one, but will require another fortnight to complete his moult. *Brahmas* were good throughout, and the Dark ones were particularly so; Mr. Lingwood, Lady Gwydyr, and Mr. Caborn, a new exhibitor, being the prizewinners. In Light *Brahmas* the competition was severe, and as will be seen by reference to the prize list, the prizes were awarded among the proprietors of some of the best strains in the kingdom. The *Dorkings* were certainly not nearly equal to what might have fairly been anticipated. The *Game* classes were not large, but of first-rate quality, the ardour of exhibitors being, no doubt, damped from the fact that the *Game* prizes at the previous Ipswich Shows had, without exception, been monopolised by very high-class birds from one of the most noted *Game*-breeders in the kingdom, a resident near the town. This season, however, in an extremely close rivalry between those noted exhibitors, Mr. James Fletcher, of Stoneclough, and Mr. S. Matthews, of Stowmarket, the north-country birds secured the first prizes, but could not maintain any position for the second premiums. *Creve-Coeurs* and *Houdans* were quite equal to those generally shown at the largest shows. In *Hamburghs*, with birds of the highest character, Mr. Tickner, a local exhibitor, had it entirely in his own hands; never before have such good representatives of all four varieties of *Hamburghs* been exhibited in this district. The prizes in the Variety class were awarded to Ptarmigan and Frizzled fowls. The Selling classes contained some extraordinary bargains, and the entries were most satisfactory. The *Game Bantam* class, always a chief feature of this Show, was again one of the best filled in the Exhibition; but, unfortunately for visitors, this class was placed not by any means in the best light, and this, coupled with the dense fog that prevailed, caused them to be seen to great disadvantage. The Honorary Secretary, Mr. Jeffries, who exhibited four pens of his best birds "not for competition," would certainly, but for this proviso, have left his rivals far in the rear. Still the class, independently of these pens, contained excellent Black Reds and an exceedingly well-matched pair of Red Piles. In the variety Bantam class were exhibited a most singular pair of Bantams, booted to excess, and each carrying the tail as closely on the back as a squirrel; their oddity excited the attention of most visitors, and their gait when alarmed was most extraordinary. In this class some good Silver-laced and Japanese were the prizetakers.

As there were only two classes for *Pigeons*—a general class for any variety and a Selling class, this division of the Show was inferior to those of former years. Black Barbs and Black Carriers were the respective winners.

Forty-two pens of *Rabbits* proved a great addition to the Show, and, although so numerous, scarcely a pen contained an indifferent specimen. The Lop-eared class was well worthy of the public interest it secured, the two prize animals measuring 22½ inches by 5 inches, and 21½ inches by 5 inches. The first was slate-coloured, the second fawn-and-white; both were shown in faultless condition. Angoras of high quality, with admirable Silver-Greys and Himalayan Rabbits, made up a fine collection.

The centre avenue was this year given up to an entirely new feature—viz., an entry of forty-eight pens of *Cats*; to many persons, more especially lady visitors, this portion of the Show

appeared highly attractive. Among the oddities in *Cats* were a pair very singularly marked, each having a perfectly white body and head, with the exception of one small black spot about the size of a shilling at the root of the left ear. There were also Tortoiseshell Tom *Cats* that appeared especially popular, Manx *Cats* without tails, Angora *Cats* of various colours, White *Cats* with intensely bright blue eyes, and kittens that from their very playfulness alone brought together groups of admirers. We may caution exhibitors of *Cats* to take special care in firmly fastening the travelling packages containing their pets, as these animals evince anything but partiality for railway excursions, in one instance the basket being delivered by the railway officials minus the cat, though from the food placed in the basket, no doubt it must have escaped during transit. When *Cats* become excited and resolute a basket, unless well made, is not to be relied on.

The arrangements within the Corn Exchange were as creditable as in former years, but the heavy rain was, we regret to say, a drawback to visitors from a distance, and even to local ones. We are informed that every pen was securely packed and delivered to its owner or to the railway company on Friday evening in time for the night mails.

COCHIN-CHINA.—Cockerel.—1 and Cup, Lady Gwydyr, Ipswich. 2, J. K. Fowler Aylesbury. *vhc*, Lady Gwydyr. *hc*, Henry Lingwood, Needham Market (2); A. Darby, Bridgnorth. Pullet.—1 and *vhc*, Lady Gwydyr. 2, Henry Lingwood. *hc*, C. Woodworth, Cheltenham; E. Fearon, Whitehaven; J. K. Fowler; R. S. Woodgate, Pembury, Tunbridge Wells; J. Watts, Birmingham.

BRAMA-FOOTLA.—Dark.—Cockerel.—1, Horace Lingwood, Needham Market. 2, Lady Gwydyr. *hc*, W. Cutlack, jun., Littleport; H. Smith; P. D. Maddox; Lady Gwydyr. Pullet.—1, R. Caborn. 2, Lady Gwydyr. *vhc*, Horace Lingwood. *hc*, F. Harris; Horace Lingwood; Lady Gwydyr. *c*, O. E. Cresswell, Bagshot.

BRAMA.—Light.—Cockerel.—1, Mrs. A. Williamson, Queenborough Hall, Leeds. 2, H. M. Maynard, Isle of Wight. *hc*, J. T. Hinks; H. Dowsett, Pleshey, Chelmsford; P. D. Maddox; C. Tindall; F. Waller. *c*, J. Long, Forest Hill. Pullet.—1, M. Leno, Markyate Street. 2, H. M. Maynard. *hc*, H. Dowsett; Rev. N. J. Ridley, Newbury; A. Freeman; C. Chawner, jun. *c*, C. Chawner, jun., Uttroter.

DORKINGS.—Cockerel.—1, O. E. Cresswell. 2, H. Lingwood. *hc*, F. Parlett, Great Baddow. Pullet.—1 and Cup, F. Parlett. 2, E. Fearon. *c*, O. E. Cresswell.

GAME.—Cockerel.—1, Cup, and *vhc*, J. Fletcher, Stoneclough, Manchester. 2, S. Matthews, Stowmarket. *hc*, W. Kitson. *c*, H. E. Martin, Sculthorp. Pullet.—1 and *hc*, J. Fletcher. 2, S. Matthews. *vhc*, H. E. Martin.

CREVE-COEUR, HOUDAN, or LA FLECHE.—Cockerel.—1, J. Walton, Craydon, Surrey. 2, W. Dring, Faversham. *hc*, J. K. Fowler; J. J. Malden, Biggleswade. Pullet.—1, J. J. Malden. 2, W. W. Cutlack, jun. *hc*, G. W. Hibbert; J. K. Fowler.

SILVER-GREY.—Cockerel.—1, W. K. Tickner, Ipswich. 2 and *vhc*, H. A. Gill. Pullet.—1, W. K. Tickner. 2, H. A. Gill.

HAMBURGH.—Gold or Silver-spangled.—Cockerel.—1, Cup, and 2, W. K. Tickner. *c*, M. M. Cashmore, Sheepshed. Pullet.—1 and 2, W. K. Tickner. *hc*, H. Churchyard. *c*, W. Turner; M. M. Cashmore.

ANY OTHER VARIETY.—1, J. Watts. 2, W. Grave (Frizzled). *hc*, E. Leeds (Brown Red Gas). *vhc*, J. Watts.

SELLING CLASS.—*Hen*, Pullet, or Duck.—1 and Cup, Lady Gwydyr. 2, H. Dowsett (Light Brahma). *hc*, C. F. Barnett (Black Red Game); J. K. Fowler. *c*, A. A. Seaborn (Buff Cochins); W. H. B. Dix (Black Spanish); F. M. Shaw (Silver Grey Dorking, and Aylesbury and Roman Ducks).

SELLING CLASS.—Cock, Cockerel, or Drake.—1, F. Parlett (Rouen). 2, G. W. Hibbert. *vhc*, J. K. Fowler. *hc*, M. M. Cashmore; F. M. Shaw (Aylesbury). *c*, H. Dowsett (Light Brahma).

SELLING CLASS FOR BANTAMS.—1, W. Adams. 2, R. H. Ashton.

GAME BANTAMS.—1 and Cup, Capt. T. Wetherall. 2, Hon. Mrs. Paget. *vhc*, W. Barton. *hc*, W. Adams.

BANTAMS.—*Any Variety*.—1, M. Leno. 2, Hon. Mrs. Paget. *hc*, J. Watts. *c*, Rev. F. Tearle. *Black*.—1 and Cup, J. Watts. 2, R. H. Ashton, 3, H. M. Maynard. *hc*, T. E. Thirlie. *c*, Rev. F. Tearle.

PIGEONS.

ANY VARIETY.—1, H. Yardley. 2, H. Lyon (Black Carriers). *vhc*, Miss E. Buckel (Ice); H. Yardley; H. G. Holloway, jun. (Pouters). *hc*, Miss E. Buckel (Black Barbs); Master H. Turner (Black Carriers); C. Norman, Westerfield, Ipswich (Black Trumpeters and Black Carriers); H. Lyon (Yellow Dragons).

SELLING CLASS.—1 and 2, C. Norman (Black Barbs and Black Trumpeters). *c*, C. Norman (Carriers); W. V. Longe (Owls).

RABBITS.

LOP-EARED.—Special. C. King. 2, T. C. & H. Lord, Huddersfield. *vhc*, F. Banks (2). *c*, W. H. Webb, jun.

ANGORA.—1, J. T. Farrow. 2, J. Schriener. *hc*, J. W. Harling; Miss E. Cotton; J. Boyle, jun., Blackburn. *c*, W. Mayell.

HIMALAYAN.—1, J. F. Farrow. 2, W. Denkin.

ANY OTHER VARIETY.—1, T. W. Ands (Silver-Grey). 2, R. H. Glew (Silver-Grey). *vhc*, E. S. Smith (Belgian). *hc*, T. C. & H. Lord (Silver-Grey); J. Boyle, jun. (Silver-Grey); Hon. Mrs. Vernon (Silver-Grey).

SELLING CLASS.—1, F. Banks (Lop-eared). 2, J. F. Farrow (Himalayan). *hc*, W. Kitson; G. Church (Welsh); C. King. *c*, J. Cranch.

CATS.

TABIES.—*Any hue, marked, striped, or spotted with other Colour.*—1, C. Goocher. 2, W. Leathers. *hc*, S. Matthew.

BLACK, WHITE, or BLACK AND WHITE.—1, G. Warne. 2, — Scotcher. *vhc*, J. J. Cane; — Scotcher; J. Coleman. *c*, L. Sheppard.

LONG-HAIRED.—*Or other Variety not Classified*.—1 and Cup, T. Goldsmith (Tortoiseshell). 2, Mrs. Pickering (Russian). *vhc*, W. Pratt (Russian); F. Ramplin (Angora); J. W. Berrie (Tortoiseshell and White).

KITTENS.—1, A. Cobbold. 2, Hon. Mrs. Paget (White Long-haired).

THE SPECIAL PRIZES FOR THE WORKING CLASSES.—*Tabby or Cyprus*.—1, J. Urpeth. 2, Mrs. A. Hudson. *vhc*, G. Jenkins. *Black, White, or Black and White*.—1, J. Thomas. 2, J. Jackson. *hc*, — Beverside. *Any other Variety*.—1, Mrs. Wythe (Tortoiseshell). *Kittens*.—1, P. Wood. *hc*, R. Hawes.

JUDGES.—Messrs. Hewitt and Turner, assisted by a jury of ladies for the *Cats*.

EGGS.—The declared value of eggs imported in the last nine months was £1,502,604.

CAMBRIDGE POULTRY, PIGEON, AND RABBIT SHOW.—This is to be held on the 27th and 28th of November in the Corn Exchange,

which will be covered-in and warmed. The prizes, three in each class, are good, and there are twelve silver cups and a medal. One of the cups is for the best Rabbit.

NORTHAMPTON GOOD INTENT

ORNITHOLOGICAL SOCIETY'S BIRD SHOW.

This was held in the Lecture Hall, Gold Street, Northampton, on October 19th and 21st.

NORWICH.—*Clear Yellow*.—1, 3, Extra 3, and *hc*, Adams & Athersuch, Coventry. 2, Holmes & Doyle, Nottingham. *vhc*, Toon & Cleaver, Kettering. *c*, Adams & Athersuch; *J*, Prosser, Derby; Bemrose & Orme, Derby. *Clear Buff*.—1, J. Audley, Leicester. 2 and 3, Bemrose & Orme. Extra 3, *vhc*, and *hc*, Adams & Athersuch. *c*, J. Prosser; Moore & Wynn.

NORWICH.—*Evenly-marked or Variegated Yellow*.—1 and 2, Adams & Athersuch. 3, Holmes & Doyle. *vhc*, Clark & Sherwin, Derby. *hc*, J. Audley. *c*, G. Golbey. *Evenly-marked or Variegated Buff*.—1, Adams & Athersuch. 2, H. and D. Audley. 3, Bemrose & Orme. *vhc*, Clark & Sherwin. *hc*, Toon and Cleaver.

NORWICH.—*Ticked or Unevenly-marked Yellow*.—1, *hc*, and *c*, Adams & Athersuch. 2, Bemrose & Orme. 3, J. Prosser. *vhc*, H. & D. Audley. *Ticked or Unevenly-marked Buff*.—1, 3, and *hc*, Adams & Athersuch. 2, G. J. Barnesby, Derby. *vhc*, Bemrose & Orme. *c*, Clark & Sherwin; W. Lamplough.

NORWICH.—*Any Variety of Crested Yellow*.—1, G. Cox, Northampton. 2, Holmes & Doyle. 3, Moore & Wynn. *vhc*, J. Wright, Northampton. *hc*, H. Headley, Leicester. *c*, J. Martin, Northampton. *Any Variety of Crested Buff*.—1, J. Goode. 2 and 3, J. Martin. *vhc*, Bemrose & Orme. *hc*, G. Cox. *c*, J. E. Thirkettle, Norwich; Moore & Wynn; T. Middleton, Northampton.

GOLDS.—*Clear Ticked or Variegated Yellow*.—1 and 3, J. Turner, Birmingham. 2, R. Heath, Burton-on-Trent. *vhc*, J. N. Harrison. *hc*, H. Headley. *c*, T. Newbold, Burton-on-Trent. *Clear Ticked or Variegated Buff*.—1 and *c*, J. Turner. 2, J. N. Harrison, Belper. 3, T. Newbold. *vhc*, W. Lamplough.

LIZARD.—*Golden-spangled*.—1, J. Taylor. 2 and *hc*, R. Ritchie. 3 and *c*, W. Watson, jun., Darlington. *vhc*, J. Mann, Burton-on-Trent. *Silver-spangled*.—1, J. Taylor. 2 and *c*, R. Ritchie. 3, R. Hawman, Middlesborough. *vhc*, J. Mann. *hc*, C. Selkirk.

CINNAMON.—*Jouque*.—1, 2, and *hc*, C. Hillier, Northampton. 3, Moore & Wynn. *vhc*, J. Tear. *c*, S. Tomes, Northampton; Holmes & Doyle, Nottingham. *Buff*.—1, W. Stanford, Northampton. 2, G. Cox. 3, Toon & Cleaver. *vhc*, C. Hillier. *hc*, Moore & Wynn. *c*, G. Wood, Northampton.

CINNAMON.—*Marked or Variegated Yellow or Buff*.—1, G. Cox. 2, J. Wilkinson, Northampton. 3, G. Brown. *vhc*, and *hc*, C. Hillier. *c*, B. S. Johnson, Northampton.

ANY OTHER VARIETY.—1, J. N. Harrison. 2, Moore & Wynn. 3, W. C. Selkirk, Dover. *vhc*, J. Wilkinson. *hc*, C. Knight, Arlesey. *c*, G. Spencer, Stot Fold, Baldock.

MULE.—*Evenly-marked or Variegated Goldfinch*.—1, M. Burton. 2, J. Goode. 3, W. C. Selkirk. *vhc*, J. Wilkinson. *hc*, G. Golby. *c*, Holmes & Doyle.

MULE.—*Dark Goldfinch*.—1, M. Burton. 2, Moore & Wynn. 3 and *hc*, G. Cox. *vhc*, R. Hawman. *c*, Mrs. Beasley. *Any other Variety*.—1, G. J. Barnesby. 2, J. Wilkinson. 3, J. Knibb. *hc*, W. & T. Barwell.

BRITISH BIRD.—*Any Variety*.—1, T. Hollis, Northampton (Thrush). 2, Mrs. Perrin, Northampton (Jay). 3, G. Cox (Brambling). *vhc*, G. Brown (Robin). S. Pinkard, Northampton (Jackdaw). *hc*, C. Knight (Bullfinch); J. Dent, Burton-on-Trent (Goldfinch).

PARROTS.—*Any Variety*.—1, G. Poole, Northampton. 2, Welby & Son, Northampton (Cockatoo). 3, W. L. Chapman, Northampton (Mealy Rosella). *vhc*, W. L. Chapman (Green Chequered); W. Bond, Northampton. *hc*, Mrs. Thompson (Green Parakeet).

SELLING CLASS.—1, J. Wilkinson. 2, J. Martin, Northampton. 3, Moore & Wynn. *vhc*, J. Barwell. *hc*, A. Lack, Northampton. *c*, W. Wright, Northampton.

JUDGES.—Mr. W. Walter, Winchester; and Mr. Bexson, Derby.

CUPS FOR THE GREATEST NUMBER OF POINTS IN PIGEON CLASSES.

I AM exceedingly glad to find my letter answered by such experienced Pigeon fanciers as "WILTSHIRE RECTOR" and Mr. J. Ford, because my object in writing was to consider the best way to produce a good Pigeon show at Devizes, as there was such a miserable one last year. I certainly do not think that by offering a cup for the greatest number of points in Pigeons there will be many entries. No doubt the birds will be the best there are, as they will belong to one or two professional dealers. Mr. Ford thinks there will be both good entries and good birds; I hope there will, and I trust that all the professional dealers (there are a great many) will send as many entries as they possibly can, and make a good fight for the cup.

With regard to Colchester Show, I did not name that Mr. Ford was guilty of dishonest exhibiting at that Show; I only quoted the article which appeared in a contemporary at the head of the Colchester prize list, to show that giving a single cup is a great mistake, because it is rarely we find several dealers compete together for one cup; if they would, then no doubt the exhibition would be all that was desired: "WILTSHIRE RECTOR" refers to the question of dealers. I call a dealer a person who makes it his business and occupation to send birds to exhibitions, or, in other words, dealers exhibit for profit, and amateurs for honour.—SALISBURY.

CANARY AILMENTS.

I SAW the above heading in your paper with great satisfaction, as I am an extensive breeder of Canaries; but my satisfaction has been changed to disappointment, for, having tried the remedies recommended for a long time, I have found them entirely inert. In attentively considering the reasoning adopted by your correspondent in his letter No. 2, it strikes me as inconclusive, or rather, I may add, faulty in its pathology, where it is said "nux vomica is homeopathic to the condition of the digestive organs which is conducive to asthma." I would ask

What is the condition of the digestive organs which is conducive to asthma? Does it mean that asthma is a disease of the digestive organs? I have at present a young Canary which is perfectly healthy in its digestive organs, but suffers fearfully from asthma, and none of the homeopathic remedies prescribed have produced the least alleviation.—TAI-KOONG-SOO.

VENTILATION OF BEES.

"UNCLE JIM" was reared in Northern New York, and has spent many years in Wisconsin, Arkansas, and other States. He is a sort of pioneer, half hunter, half bee-keeper, and a genius generally. He made me a visit a few days since. Said he wanted to see Miss Ella and her bees, for he had read many of her letters, some of which pleased him; but there were many things not quite clear to him, and, as he was on his way east, he thought he would just call and see for himself. The first thing that attracted his attention was the small opening between the blocks at the entrances of the hives. "Why leave this opening?" inquired he. I replied that it was for the purpose of

Ventilation.—The bees must have plenty of air. "Just stop a moment, and let me ask a question," said Uncle Jim. "I see that in the making of your hives you have closed all the seams air-tight, except the entrance. Please tell me what material you used to do this with, as I see that it is very firm." It was made of beeswax and rosin, but a kind that is very light-coloured—a very pure article. These are melted together and poured along the seams in the brood-chamber, in order to save the bees so much labour, for they always glue the bottom board fast and fill-up cracks and crevices.

"Very well, that is one of the most sensible things that I have seen; but then, I think, the entrance should be closed tight, for I observe that the air can pass from this entrance up through the bees and out through the honey board." "Just so," I replied, "that is for the purpose of ventilating the hive." "Well," persisted Uncle Jim, "but don't you know you are freezing the bees with this kind of ventilation? A draught of cold air is constantly passing among them, and must not only chill them, but freeze the honey. I am much surprised that you thus treat your bees." "But what will they do for air?" I asked. "Well, I think that they will get all the air from the top that they need. In Russia, people have their windows double glazed, and place a soft brick between the sash to absorb the moisture, in order that the light may be admitted; but no air can come through. Their doors are listed, and the room is air-tight, and after the birchwood has been deprived of its gases, the stone flue is closed in order to retain the heat. Now, these Russians are a hardy people and know how to keep warm. No draughts of cold air are allowed to enter their dwellings, such as you admit into your bee hives. Look at the Esquimaux, who live in stone or snow huts, with only one entrance. They have not even a fireplace, but depend on the heat of an oil-lamp and animal heat to keep it warm. Now, how long could they live in a hut like our bee hives if they left the entrance open? Not long, I suspect, for the entrance is kept closed, and the air breathed over and over again. The carbonic acid gas that is evolved being heavier than common air, or this warm air of the room, falls to the ground, and is not again breathed. Can't your bees live as do the Russians and nomads of the Arctic regions? I believe that they can, and a great deal better than with this small hole in front. You see how these bees are clustered on these frames of comb. Let me ask you how much air those little fellows get who are next the honey, with an inch or more of bees clustered over them?"

I could do nothing with such a man, and so let him just talk on. "When I was a boy and lived in York State, way up near 'John Brown's Track,' we kept bees; but they were some of them in straw and some in box hives. The winters were long and cold. Let me see. The snow came in November, and lasted until the last of April; that was nearly six months. We had the hives in a bee-house, that sheltered them from the winds and driving storms. Sometimes the snow-drifts covered the whole house. In the top of the box hives was a recess for honey-boxes, and, when these were taken off in the fall, the small holes were left unclosed; but the top cap was nailed on, though not being made to fit air-tight. The bees had closed every crack about the body of the brood chamber, except the entrance, and this we corked-up with cotton rags. So, you see, that all the air these bees had was from above, and that in limited supply. In case of a January thaw, which was a pretty sure thing in that country, and when the ground was bare and the weather warm, we let the bees out in the middle of the day, and they always appeared to enjoy it highly. Sometimes we let them out this way during a week, but we were particular to close them in at night, so that they should not come out when they chose to do so; for sometimes there would fall an inch or two of snow at night, and it would be warm in the morning, and if the bees came out they would get chilled on the snow, and could not get back to the hive. Our bees made a great deal

of honey in those days, but there was not much demand for it, as everybody made so much maple sugar; and, if we could get 8 or 10 cents a pound for it we were well satisfied; and no one thought of keeping more than a dozen hives—just enough to fill his bee-house, and the surplus swarms were killed with sulphur. You don't have it so cold here on the prairie, nor so long winters as we had in that part of York State, but you have cold weather, and, what is worse, you have more sudden changes—thawing and freezing. Your bees are often out, for the warm weather invites them to do so, and then they return to their hive and have to endure that draught of cold air. Why, I am surprised that you save as many swarms as you do. But I am not through talking about this ventilation of yours. With this draught of air, the dampness of the hive is carried upward and congealed in forming frost and ice, and, in warm days, is melted and runs down among the combs, and soon makes them mouldy, and this leads to the dysentery among the bees, which is a very common disease in cold countries, for the bees are kept-in so long that a very little bad management will affect them. In the bee-trees, where the wild bees live, there is but one entrance, and no upward ventilation, and yet the bees do well. It is true that frost and ice will form in these hollow cavities of the forest trees, for I have seen it when cutting down the trees in winter for the honey, but then it is on the sides of the cavity, and the water, when thawed, runs down the half-rotten surface and is absorbed by it, and thus does little injury. I protest against this patent ventilation of yours that exposes the poor bees to a current of cold air; and I am not surprised that this class of bee-keepers want a cellar or warm room for their bees, for it seems to me that it is almost impossible to winter bees on their summer stands in this manner. Last week I was down on Spurr Creek, and saw an apiary of seventy hives standing-out exposed to the direct shocks of the cold winds, with only a few bundles of corn-stalks set against them on the north and west sides, but with the entrances more open than yours, and the owner has already lost several swarms."—ELLA (in *Chicago Tribune*).

MR. PETTIGREW'S SYSTEM.

For the last two years I have pursued this system in the management of my bees. I use hives 18 inches wide (inside measure), by 12 high, as Mr. Pettigrew advises. This year I have taken more than 100 lbs. of honey from only four hives. From one of these I took two supers, one of 20 lbs., the other 5 lbs., and over 40 lbs. of honey when I took it up, drumming the bees into another hive rather smaller, which they have almost filled with comb. My bees are the common old black sort. From another hive I took more than 35 lbs. of honey, although it had been blown over in the winter and nearly all its comb destroyed. From my own experience this year I strongly uphold Mr. Pettigrew's system. My bee-keeping neighbours have barely taken any honey this year.—E. F. G. T., *Wheatley, Oxfordshire*.

OUR LETTER BOX.

FEATHER-EATING PULLETS (C. D. S.).—We believe it arises in the first place from a disordered condition of body, the bird seeking for something it cannot find. While engaged in the search, a bare spot on a bird is seen and pecked at directly. Every bird, even a Dove, is carnivorous, and as soon as the skin is removed and blood is seen they go to work *con amore*, and will not leave off. Our cure has always been to remove the birds with bare spots till the feathers were grown. When they return in full plumage they are safe. It is often the work of one hen, and if she is removed the nuisance ceases. We believe the habit becomes a second nature, and the cannibal becomes a fowl-eater. We should not, therefore, ever allow the peccant hen to return to the walk. We have found benefit only from one treatment, which is a copious supply of lettuce, especially if they are going to seed. The best treatment for the bare spots is to rub them often and freely with sulphur ointment.

BREWERS' GRAINS FOR POULTRY (Crève-Cœur).—We tried brewers' grains some years ago, but were compelled to give them up. Our fowls did badly upon them, and their laying was unsatisfactory. We shall always use one Cuckoo note as regards feeding poultry. If you attend to it properly you will find nothing better or more economical than the natural food. You may grind the barley or oats, as they render more service in that form, and you may give the scraps from table or kitchen, as they are not only nourishing, but they make a nice change; but you will do well to recollect, that whatever may be the apparent gain from the use of stimulants is the mere forestalling of things that would have come perhaps more profitably in the ordinary course.

FOWLS FOR CONFINED SPACE (Reader).—We are strong believers in Brahmas for confinement. If they are well fed and cared for we may almost apply Byron's words to them, and say they are "Tamed to their cage, nor feel a wish to rove." They will not only lay well, but they will look well and be satisfied. Fowls are like children, if they have nothing else to do they will get into mischief. They are like them in another respect: If the breakfast or dinner were always on the nursery table, the children would first eat too much and then become careless of food. It is so with fowls in confinement. Nothing is more mistaken than the so-called kindness that says, "Poor things! they cannot get out to search for food, be sure they always have some by them." Instead of it, try so to arrange their pens that they shall have to seek and scratch for every morsel of food. Make the bottom of their pen as uneven as possible, always allowing for the running away of rain water. If there be room, and there almost always is, make little hillocks, and one hill. Let the surface be loose, and scatter the food on it. If there be no grass, let them have every day a large sod of it cut with plenty of earth to it. Feed regularly, and do not overfeed. Endeavour to provide them with the best

substitutes you can in confinement for those things they have at liberty. Success is the sweetener of effort, and you will find your painstaking rewarded.

DUCKWING GAME FOWLS (P. T. T.).—The Duckwings are nearly all crossed with the Black Reds for the sake of colour, and it is possible some of your chickens may have thrown back. It is full early to condemn them. The Silver Duckwing must have white hackle and saddle, but in the ordinary Duckwing they may be and are straw colour, and the copper saddle is also admissible. In both the breasts, tails, and thighs should be scrupulously black, the wing steel-barred. The white earlobe is not a disqualification, it is common to some breeds.

CHINESE PHEASANTS (A. M. H.).—You will have no difficulty in getting a Chinese Pheasant hen if you apply to Baily & Son, 113, Mount Street, Grosvenor Square, W.

EYES OF ARCHANGELS, &c. (Old Subscriber).—The red eye is correct but very excellent Archangels are to be seen with pearl eyes. If your bird were in all other points superior, it would win. Consult a chemist as to the removal of the oil stains. Prevention is better than cure; use capsules next time.

LINSEED CAKE FOR PIGEONS (F. W.).—A very little of this may do no harm, particularly at the time of moulting; but it has been found in Germany, that after the linseed harvest Pigeons are frequently ill and die, so it must be given very sparingly. That the birds like it extremely is true, just as they do hempseed, which is also injurious.

WHITE CLOVER BLOOMING (B. S. H.).—If sown now it would bloom next year.

METEOROLOGICAL OBSERVATIONS, CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	A.M.				IN THE DAY.					
	Baromet- er at height above level.	Hygromet- er.		Direction of Wind.	Temp. of Air at 5 ft.	Shade Tem- perature.		Radiation Temperature.		Rain.
		Dry.	Wet.			Max.	Min.	In sun.	On grass.	
1872.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Oct.										
We. 16	29.351	48.7	47.2	S.E.	46.2	54.4	35.2	76.1	80.3	0.080
Th. 17	29.619	45.6	45.3	N.	46.4	55.8	36.9	72.1	82.4	0.025
Fri. 18	29.712	50.9	49.5	N.E.	48.1	54.2	44.8	61.4	43.0	0.290
Sat. 19	29.772	46.6	45.9	E.	48.3	62.0	43.1	59.1	87.9	0.159
Sun 20	29.674	50.6	50.4	E.	49.0	64.2	46.6	55.3	45.3	0.169
Mo. 21	29.492	51.0	50.6	S.E.	50.2	55.8	47.9	67.3	45.3	1.050
Tu. 22	29.430	46.8	46.7	N.	50.2	51.9	46.4	80.5	42.8	—
Means	29.564	49.6	47.9		48.8	54.0	42.8	67.4	89.6	1.695

REMARKS.

16th.—Rainy dull morning; sunshiny and bright afterwards; showery evening.
17th.—Fair morning; rain and cloudy at 4 P.M.; not much sunshine all day; cloudy night.
18th.—Warm, damp, cloudy day, rain more or less all day; sharp squall of short duration at 7.15 P.M.
19th.—Rather finer morning; rain at 12.30; very wet evening.
20th.—Dull and rainy throughout, with fog at intervals.
21st.—Wet and foggy morning; very dark at 10.5 A.M., and also at 1 P.M.
22nd.—Very heavy rain until 6 A.M., 0.64 inch having fallen since 9 P.M. on Monday; a further fall of 0.30 between 6 and 8 A.M.
A very damp week, almost constantly overcast with drizzle, and on Monday night and Tuesday morning very heavy rain.—G. J. SYMONS.

COVENT GARDEN MARKET.—OCTOBER 23.

PRICES remain almost stationary. Foreign imports are much lighter this week, and the supply and demand are about equalised.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	3	sieve	0	to 0	Malberries.....	10	lb.	0	to 0
Apricots.....	doz.	0	0	0	Nectarines.....	doz.	0	0	0
Cherries.....	per lb.	0	0	0	Oranges.....	100	lb.	0	20
Chestnuts.....	bushel	10	20	0	Peaches.....	doz.	10	0	25
Currants.....	3 sieve	0	0	0	Pears, kitchen.....	doz.	1	0	3
Black.....	do.	0	0	0	dessert.....	doz.	2	0	4
Figs.....	doz.	0	0	0	Pine Apples.....	10	lb.	4	8
Filberts.....	lb.	1	0	1	Plums.....	3	sieve	5	0
Cobs.....	lb.	1	0	1	Quinces.....	doz.	1	0	0
Gooseberries.....	quart	0	0	0	Raspberries.....	lb.	0	0	0
Grapes, hothouse.....	lb.	2	0	5	Strawberries.....	10	lb.	0	0
Lemons.....	100	6	10	0	Walnuts.....	bushel	15	0	80
Melons.....	each	2	0	5	ditto.....	100	3	0	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	doz.	2	0	4	Mushrooms.....	pottle	1	0	8
Asparagus.....	100	0	0	0	Mustard & Cress, punnet	0	2	0	0
Beans, Kidney.....	3 sieve	3	0	4	Onions.....	10	lb.	2	0
Broad.....	bushel	0	0	0	Pickling.....	quart	0	6	0
Beet, Red.....	doz.	1	0	8	Parsley per doz. bunches	2	0	3	0
Broccoli.....	bundle	0	9	1	Parsnips.....	doz.	0	9	1
Cabbage.....	doz.	1	0	1	Peas.....	quart	1	0	1
Capiscums.....	100	2	0	8	Potatoes.....	bushel	3	0	5
Carrots.....	bunch	0	6	0	Kidney.....	do.	3	0	5
Cauliflower.....	doz.	2	0	4	Round.....	do.	2	0	4
Celery.....	bundle	1	6	0	Radishes.....	doz.	1	0	1
Coleworts.....	doz. bunches	2	0	3	Rhubarb.....	bundle	0	0	6
Cucumbers.....	each	0	3	1	Salsify.....	10	lb.	0	9
pickling.....	doz.	0	0	0	Savoy.....	doz.	0	0	0
Endive.....	doz.	2	0	0	Scorzoneria.....	10	lb.	0	9
Fennel.....	bunch	0	3	0	Sea-kale.....	basket	0	0	0
Garlic.....	lb.	0	6	0	Shallots.....	lb.	0	3	0
Herbs.....	bunch	0	8	0	Spinach.....	bushel	2	0	0
Horseradish.....	bundle	3	0	4	Tomatoes.....	doz.	1	0	2
Leeks.....	bunch	0	2	0	Turnips.....	bunch	0	3	0
Lettuce.....	doz.	0	9	1	Vegetable Marrows.....	doz.	0	6	1

WEEKLY CALENDAR.

Day of Month	Day of Week.	OCT. 31—NOV. 6, 1872.	Average Temperature near London.			Rain in 43 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m.	h.	m.	h.	m.	h.	m.	h.	Days.	m.	s.
31	TH		54.0	38.0	46.0	22	55	af 6	33	af 4	40	5	30	4	29	16	18
1	F	ALL SAINTS.	54.3	37.9	46.1	25	56	6	31	4	58	6	47	4	0	16	19
2	S	Michaelmas Law Term begins.	51.4	37.3	45.8	19	58	6	29	4	22	8	10	5	1	16	19
3	SUN	23 SUNDAY AFTER TRINITY.	53.5	35.9	44.7	19	0	7	27	4	44	9	41	5	2	16	19
4	M		52.1	36.6	44.3	22	2	7	26	4	4	11	22	6	3	16	18
5	TU	Meeting of Entomological Society, 7 P.M.	52.9	37.2	45.0	20	3	7	24	4	after.	19	7	4	4	16	16
6	W	Royal Horticultural Society, Fruit Show, Fruit, [Floral, and General Meeting.]	52.4	36.9	44.7	19	5	7	22	4	9	1	33	8	5	16	13

From observations taken near London during forty-three years, the average day temperature of the week is 52.9°; and its night temperature 37.1°. The greatest heat was 67°, on the 31st, 1854; and the lowest cold 20°, on the 5th and 6th, 1868. The greatest fall of rain was 0.88 inch.

PEACHES FOR EARLY FORCING.

WE have heard the experience of some of our best fruit-growers as to which are the best Peaches for general cultivation, what we want to hear now is which are the best varieties for early forcing to be ripe in April and May. What about Mr. Rivers's early varieties of 1868—viz., Early Beatrice, Early Louise, and Early Rivers? What is the earliest date at which these have ripened? If anyone has tested their qualities in that respect, perhaps he would kindly state his experience about them, or any other new variety. We see so many of our new fruits now-a-days puffed-up for a year or two and then suddenly fall to the ground, and be trampled on, that one is afraid to plant a new variety to any considerable extent until he has proved it himself to be what it is represented to be. Madresfield Court Grape, for instance: what are we to think of that now such men as Mr. Thomson, of Drumlanrig, have utterly discarded it to make room for better?

But to return to my subject. The best early Peach of late years has been, undoubtedly, Early York; if this is to be beaten by these new varieties (which remains to be seen), we shall indeed have a good Peach for early forcing. I hope to fully prove them next spring; I did so partially last spring. I received a two-year-old plant of each of the first-named three new varieties in the spring of 1871; they were placed in large pots, and grown in a cool house until July, and were then set out of doors at the base of a south wall to ripen their wood. They were planted in the early Peach house in September, alongside of Early York, Noblesse, Royal George, and Red Magdalene, which had been regularly forced from December 1st, and were again started on that day. Result: the old trees began to bloom on January 1st, were in full bloom on the 12th, all set on the 20th. The three new varieties began to bloom January 25th, were in full bloom on the 30th, all set on February 10th. Now for a race. The first to ripen was Early York, April 28th; next came Early Beatrice, May 3rd; Early Louise, May 4th; Royal George, May 6th; Red Magdalene, May 12th; Early Rivers and Noblesse, May 13th. Thus the new varieties, although recently planted and not forced before, had beaten some of the old ones, and nearly overtaken Early York. If either of the new kinds is to supplant this old favourite it is, in my opinion, Early Louise, which carried thirteen fruits of the finest colour and quality, and measuring nearly 9 inches in circumference. Early Rivers bore seven fruits of good size, and very delicately tinted with red on a creamy-white ground, very handsome, but slightly split, so that the stone was exposed. I have heard it is subject to this. Early Beatrice was the smallest tree, and only bore two fruits, which were very small, and of poor quality. I hope that is not its real character, otherwise it will not be worth much. The trees are now of good size, full of well-ripened shoots, and covered with double and triple buds;

they will be forced from December 1st, so that if all go well they will, I expect, leave the old trees a long way in the rear.

In the election of Peaches I see Early Beatrice is named by one, among the best six varieties; Early Rivers by two, and Early Louise by one, in the best nine, which shows that they are good in some places. I hope we shall hear more about them, and thus prove that they are worthy of the characters given to them four years ago, or the contrary.—H. HARRIS, *Naseby Woolleys*.

NOTES ON GERANIUMS AND ROSES.

FOREMOST amongst Geraniums I must place Vesuvius, both for bedding purposes and for pot culture, as I find it the freest bloomer, the most brilliant and dazzling colour, and the plant of a good habit of growth. William Underwood and Jean Sisley also do well with me. Morning Star is a decided improvement on Stella, having the same habit of growth as the latter, but the flowers are of a more intense scarlet, and it is a better trusser. Monsieur Comner is very effective either for bedding or pots, being an immense trusser, and of a peculiar shade of colour. For a dark variety Waltham Seedling will not easily be beaten. Amongst the older varieties Trentham, Christine, Indian Yellow, Orange Nosegay, and Tom Thumb must find a place in every collection. For vases I would select Donald Beaton, Lord Derby, Kentish Fire, Commander-in-Chief, Acme, Marie Van Houtte, The Hon. Gathorne Hardy, and Lizzie.

Amongst the double varieties I find two of the oldest sorts the best—viz., Gloire de Nancy and Madame Lemoine.

With me the present year has been the best one for Roses of any that I remember, although a very severe frost in May somewhat checked them, and in some instances cut off the first blooms. If I were to select forty-eight Roses out of my collection my choice would be as follows:—Charles Lefebvre, Maurice Bernardin, La France, Olivier Delhomme, Professor Koch, Alfred Colomb, Marie Baumann, Baroness Rothschild, François Louvat, Xavier Olibo, Fisher Holmes, Gloire de Ducher, Edward Morren, Duke of Wellington, Marie Rady, Jules Margottin, Lord Clyde, Duchesse d'Aoste, Marguerite de St. Amand, Antoine Ducher, Léopold Hausburg, Vicomtesse de Vesins, Prince Humbert, Monsieur Woolfield, Pierre Notting, Madame Creyton, Felix Genero, Emilie Hausburg, Léopold I., Aurore du Guide, William Griffiths, Marquise de Castellane, Exposition de Brie, Caroline de Sansal, Madame Victor Verdier, François Fontaine, Général Jacqueminot, Sénateur Vaisse, Mlle. Gabrielle de Peyronny, Comtesse de Chabillant, Monsieur Boncenne, Souvenir de Malmaison, Charles Lawson, John Hopper, Madame Alfred de Rougemont, Boule de Nieve, Reine Blanche, and Paul Ricaut.

One of your correspondents speaks of La France not being a good autumn Rose. With me it has been a most perpetual bloomer from the time it first came out until last week, when a severe frost put an end to it for the

season. Maréchal Niel, of which I have several plants, has not given me a single bloom this season, but has made wood freely.—E. C., *Oakham*.

DISA GRANDIFLORA CULTURE.

SELDOM do we find this fine old terrestrial or ground Orchid in that health and vigour which we wish to see it present. I say old, for it is nearly fifty years since its first introduction to our gardens; still it is only within the last few years that anything like success has been attained in its cultivation. Previously it appears to have entirely resisted whatever attempts were made to grow it, even by the most skilful. In consequence of this it gained a bad name as being difficult of cultivation; but when its requirements, which are few and simple, are suitably supplied, it is one of the easiest of plants to grow. Abandon the old idea of drying it to death, give it an abundance of water, and it will grow and flower as freely as a weed. It is, no doubt, kept dry by many an anxious amateur even at the present time, and in this belief I make a few remarks on its cultivation.

Disa grandiflora is rather dwarf, being about 6 or 8 inches high; but the flower-stems lengthen from the top of its growth to the height of 2 feet or more, and are furnished throughout their length with dark green grass-like foliage, and surmounted with a cluster of three or more of the lovely blooms. When seen in a mass of two or three dozen spikes, and at a distance, they have a striking resemblance to a clump of a scarlet *Gladiolus*.

The great object to be secured is luxuriant growth with abundance of bloom. To obtain this it requires liberal treatment. As I remarked above, give it a plentiful supply of moisture; do not even allow it to become dry during the period of rest, which is short compared with that of growth, and to prolong it by artificial means greatly injures the plant. This is the season when it requires our special attention. November, as a rule, is the spring-time of the *Disa*—that is, for healthy plants; those in a weakly state may be somewhat later, and, on the other hand, strong plants a little earlier. To make the treatment as plain as possible, I will suppose the plants to be healthy and vigorous; in this case pot at once, if needed at all. In the after treatment we must take a lesson from nature. Coming from the Table Mountain, of which it is spoken of as the pride, it is at once evident it does not require a hot temperature; as long as frost is excluded that will suffice. Where there is no cool house it will do well in a cold pit or frame; still, if possible, give preference to the house. In the Cape, we are told, it grows in swampy places, on the margins of pools and streams, which in winter are so swollen that the plant must be immersed in water; to imitate this condition we must, therefore, treat it as a semi-aquatic. Supposing the plants to be newly potted, top-dressed, or otherwise made ready for the growing season, they should be kept constantly moist, gradually increasing the amount as the growth becomes stronger, and on bright days a slight sprinkling from the syringe will be very beneficial. Continue this treatment up to February, after which time it is next to impossible to over-water the plant—that is, if good drainage has been provided, and during bright hot days it will be highly essential to syringe overhead, by which means the red spider will be kept under, and the foliage preserved in a clean and healthy state. As soon as the flowers show themselves, which will be about the middle of July, this mode of treatment must be discontinued, and water at the root gradually withheld, still bearing in mind not to allow them to become dry at any time. Plants here (Fernhurst) treated as above and placed at the gable end of the Odontoglossum house, produce annually dozens of rich blooms, many of them having three or four flowers on one spike.

I noticed at the commencement the time at which potting should be performed. The compost should consist chiefly of good peat, which should not be beaten in order that nothing but the fibrous portion used in potting the majority of Orchids may be left, but use it in a moderate state. To this add sweet horse droppings and leaf mould in proportion, with some broken crocks, and, if at hand, a few bits of charcoal and some well-washed sand or silicious road grit, sufficient to keep the whole in an open porous state. Although the *Disa* requires much moisture, it will not endure stagnant or sour soil. I prefer shallow pans to pots of any description; they should be perfectly clean and well drained. In potting, let the plant be somewhat elevated above the rim of the pan, which will greatly facilitate the draining process.

With regard to plants in a weakly condition, I would say, Treat as above, except that for safety it may be as well to defer the potting a little longer; but as soon as any signs of activity are perceived pot at once, if thought needful, for if allowed to remain till the growth is 2 or 3 inches high it would be much better not to disturb the plant for that season.

In conclusion, the plants should be placed as near the glass as possible. They will thus be more robust, and the flowers will also be of a much higher colour. I need scarcely add that they should at all times be screened from the direct rays of the sun by means of blinds that can be easily removed when not required, using them only when they are really needful.—C. J. WHITE.

WINTERING BEDDING PLANTS.

IN common with every true lover of the flower garden, I was always pained at this season to see so many of our beautiful bedding plants consigned to the rubbish heap. After the greenhouse was stuffed full there used to be many plants that I longed to save for another year. I had tried the plan of shaking out and tying them up by the heels in bundles; but whether in attic or in cellar, my success in this was nil, repeating. At length I hit upon a plan of creating room in the greenhouse, which may be useful to some of your readers. It is Dean Swift who, in his inimitable "Tale of a Tub," makes the remark that in every assembly, however crowded, he has always noticed that there is room overhead if one could but get there. In my plan, on the contrary, there is room below if one knows how to utilise it.

Under the central stand of the greenhouse I make a sort of pit, as long and as broad as I can, and of a depth which will allow the light to stream in from the windows—in my house about a foot deep. This depression is filled-in, first with clean stones or broken tiles to the depth of 4 inches, then with as much dry earth and sifted ashes or lime rubbish. The plants are then brought in and carefully turned out of their pots—all strong-growing kinds should be bedded in their pots. A large portion of the latest growth, and nearly all the leaves, having been removed with a very sharp knife, the plants are packed as closely as possible, without breaking the ball of earth, in the dry bed prepared for them. Were this all, the labour would be in vain, for the drip from above would long before the spring have ruined most of them. The main point of all is to keep them dry, and this I effect by sliding-in pieces of old floorcloth under the stage whenever watering is going on. The drip runs off from this sloping roof, the plants remain perfectly dry, and when drops have ceased to fall the floorcloth cover is pulled out and rolled up. It is possible that other materials may be found to answer as well—for instance, oiled calico, paper, or felt. The warmth of the house will keep the plants alive, and when the days begin to lengthen the young leaves will appear all over the plants, which will afford, if not the earliest blossoms or a display quite equal to fresh plants, at least a supply very useful for summer and autumn.—T. S. C., *Bristol*.

LAPAGERIA ROSEA AND ROSEA SPLENDENS.

THE lovers of fine and useful plants must all be obliged to your correspondent Mr. C. J. White for his notice of, and instructions on, the method of growing *Lapageria rosea* in pots. I know quite well the plant may be grown in that way, having seen many fine specimens both of the red and white varieties so managed. But it is not everyone who has both a greenhouse and an intermediate house, and it occurred to me that many who could spare a corner in their greenhouse might be glad to know with how little trouble they could turn it to so great advantage as mentioned in my last. All the care the plant here has had this season is plenty of water. To-day I counted 375 blooms on it, and every season it is getting better. Of course a large pot, or still better probably, a large tub, comes near to planting-out. What I thought of most importance to notice was the method of planting in open soil and stones, with ample drainage. The proof of the utility of this is shown here. A plant of the variety *L. splendens* (Henderson's) was planted in the same house with the common one, but less carefully, as it turned out. It grew so badly that I did not consider it equal to the old variety, as the flowers were poor. Last season, however, I saw its roots cleared out on one side, and three barrowloads of proper soil and stones put to it. This season it has grown more strongly, and the flowers are very fine, richer in colour, and of more

substance than those of the old one. To show *L. splendens* in all its glory it ought to be trained on the south side of the house, so that the sun may shine though it to the spectator, and in that position the flowers are superb.

I observe a curious difference in the shape of the fruit of the two varieties; the cross section of the fruit of *L. rosea* is nearly a circle, that of *L. splendens* a triangle rounded at the angles.—*L.*

POT CULTURE OF THE GRAPE VINE.

This method of Vine culture has not recently been touched upon by any of the contributors to the Journal. It is not the method one would recommend to supply Grapes of the very best quality "all the year round," but it is sometimes very desirable to grow them in this way. For instance, when a new viney is planted there is generally an opportunity to grow a number of pot Vines to afford a supply of fruit without cropping the permanent Vines too heavily at first. In Cucumber houses, and in unoccupied corners, pot Vines may be introduced when the supply of Grapes is not equal to the demand. It was my practice here, before the viney came into full bearing, to grow and fruit a large number of pot Vines annually, and after the first season I grew all my own fruiting canes. I found it was the best practice to grow them in one year from eyes, as canes of the strongest description can be obtained in this way without the aid of bottom heat, except for a very short time in the earlier stages of their growth.

To obtain good fruiting canes the eyes must be put in early in the season. I save some of the best eyes when pruning the earliest viney, and lay them in somewhere out of doors until the middle of January, when they can be inserted singly in the centre of a 3-inch pot. The pots should be placed in a cool house until the first week in February; about that time introduce them to a gentle bottom heat in a house where the night temperature ranges from about 50° to 55°. Under these circumstances the roots will soon be in active growth, and the shoots will appear above ground. Until the young Vines are growing freely it is as well not to give too much water, as it would cause them to damp-off. I generally plant the eyes in moderately damp compost, and plunged in a moist bottom heat they do not generally require water at the roots until the shoots are above ground.

The plants should be shifted into larger-sized pots immediately the roots show through the hole in the bottom of the pot; plunge in the bottom heat again for a week or ten days, after which they are as well without bottom heat. The night temperature at this time should be 65°, with a proportionate rise by day. When the pots are full of roots shift again, and do not allow the plants to experience any check; water freely, and keep them clean by syringing twice daily. The best of all composts is sound turfy loam, with a fair proportion of clay; if it is cut six weeks previous to use that will be long enough, as it is not so good if the loam has lain until the fibre has decayed. The turf should be torn to pieces by the hand. To every barrowload of this turf add one 9-inch potful of half-inch bones. In potting, ram-in the compost firmly.

If the plants have thriven well they will be ready to shift into the fruiting-pots by the end of July. It is well not to delay the final shift, in order that they may be firmly established before autumn. As long as the leaves continue green give plenty of water, using it more sparingly when the leaves near the base of the plant show signs of decay; at the same time ventilate the house more freely, and allow a little air to be admitted all night.

Pruning should be performed as soon as all the leaves are off; it consists in cutting back the main rod to from 6 to 9 feet from the surface of the pot, and cutting back all the laterals closely. The pots may then be removed to a cool and airy house with a dry atmosphere until they are wanted for forcing. They do not require a long rest, they may be started very shortly after they are pruned; but when it is necessary to start them into growth before the shortest day, a mild bottom heat is desirable; this will push the roots into active growth, the buds will then break regularly and strongly, and show plenty of bunches.

Pot Vines may be trained in two ways. One is to place three or four stout sticks in the pot and train the rod spirally round the sticks; this is the method usually adopted, and it answers very well. Another mode in which I have trained them for a number of years, and which has obtained many admirers, is this: A stout iron rod has three prongs fixed on one end—this

is to steady the trellis in the pot—on the other end is fixed a circular trellis, consisting of an outer and inner ring, about 2 feet 6 inches in diameter; the stem of the Vine is trained up the iron rod, which is from 3 feet to 3 feet 6 inches high, and the rod is then bent round between the outer and inner rings, and the young shoots are trained to the trellis, from which the clusters of Grapes hang down, and have a fine effect.

In no case ought the Vines to be started in a high temperature; one of 45° is sufficiently high for the first ten days, when 50° may be maintained as a night temperature. With a slight bottom heat the temperature may be higher at night as well as by day, as then the roots will be in more active growth.

Free-bearing, free-setting varieties are best adapted for pot culture. I have tried many different varieties, and the following, all points considered, I think the most desirable—viz., Black Hamburgh, Foster's White Seedling, Alicante, Muscat of Alexandria, Muscat Hamburgh, and Buckland Sweetwater.

There is one matter in connection with Vine culture to which I wish to draw attention, as I think it of much importance, and that is the amount of artificial heat required to ripen Grapes of the Muscat class. Messrs. Lane & Son, of Berkhamstead, grow magnificent Muscats, I believe with very little artificial heat; and Mr. Barron has also shown us what can be done at Chiswick in the way of ripening such Grapes as Alicante and Madresfield Court Muscat in a house which is not furnished with any heating apparatus. The last two seasons have been very unfavourable for ripening Grapes well, and yet the examples he exhibited were well coloured and of exceedingly fine flavour. The last season has been one which required much firing, and with coke at a guinea a-chaldron, and coal 35s. a-ton, it is a serious matter to some employers. From my own experience this season I am inclined to advise less artificial heat for Muscat Grapes during the summer and early autumn months. I allowed the fire to go out shortly after the Grapes were set in a house containing such sorts as Muscat of Alexandria, Alicante, Gros Guillaume, and White Tokay, and the Grapes are much superior in quality to what they were last year with heat applied nearly all the season, and red spider has not been so troublesome. This is a matter of much importance, and one on which information is wanted.—*J. DOUGLAS.*

STANDARD GERANIUMS.

Few plants grown for flower-garden decoration will repay the cultivator more satisfactorily than standards of the different sorts of Geraniums now under cultivation. They not only flower more freely than plants grown in the ordinary way, but are also very unique and attractive objects during the whole of the flower-garden season, and when this is over they are equally valuable for the rich display of flowers. After being housed, if kept in an airy temperature of 45° to 55°, they will continue flowering throughout the winter. This free and late flowering no doubt arises from the thorough ripening of the wood, principally owing to the cramped and matted state of the roots in the pots, and to the free and full exposure of the whole plant to the sun and air. I find that late flowering is stimulated by keeping the plants out of doors as far on in the autumn as can be done with safety; the falling temperature of the shortening day gives a check to growth, which renders the plant more susceptible of being excited into growth when put again under glass.

We have here a few dozen good established plants on stems from 2½ to 3½ feet in height, principally of the variegated-leaved sorts. They are turned out annually, the pots being plunged to the rim in the centre of small flower-beds, and singly in the turf. My method has been to shift the plants in February or March, taking off all round about an inch of the ball and roots, in the case of those which are large, and to place them in the same sized pots. The soil is enriched with a good quantity of sheep's dung. Smaller-sized plants are shifted into larger pots, and a succession of these is always kept under glass in training, to attain the desired height in order to take the place of failures. I may here remark that the Cloth of Gold Geranium, which grew so badly everywhere in 1865, was perfection here last season, and so was the much-decried *Iresine Herbstii*, which improved weekly after the middle of July. *Coleus Verschaffelti*, however, was quite a failure.—*J. WEBSTER, Gordon Castle.*

RENFREW LEEK AND ONION SHOW.—This Show, which was open to all competitors, was held in the Queen's Hall, Ren-

frew, on the 19th inst. Notwithstanding the very unfavourable season, many of the spring-sown Onions measured from 14 to 16 inches in circumference, and were of the finest quality. The Leeks were very numerous and extra large, many of them measuring from tip to tip of the leaves, when spread out, nearly 8 feet. The variety of Leeks that carried off all the prizes was Dobbie's Champion.

DESTROYING PLANTAINS ON LAWNS.

A FAR more expeditious mode than digging out and salting the holes is the application of oil of vitriol. It is also equally effectual, as it completely kills the Plantains. Take an old blacking-bottle with a wire round it to carry it by, and a stick to dip with. The stick should not be pointed, but notched round for an inch or two at the end the better to hold the liquid. Just one drop quite in the heart of the Plantain is sufficient to cause death, and the notched stick will contain at one dip enough to destroy three or four plants. If the acid is good (it varies in strength), the work of death can be both seen and heard, for the vitriol hisses, and it burns up the Plantain in a moment.

The remains of the burnt leaves can afterwards be swept or raked up. A row of Plantains a foot wide sprang up on the lawn here where an iron fence formerly ran. The owner, seeing at a place he visited the good effects of vitriol in ridding a lawn of the weeds, put the hint into practice. The Plantains were killed in an hour, and have never appeared again, and never will. It is three years ago, and it is impossible to recognise the line of the fence. After the leaves were raked up a little grass seed was sprinkled on the bare place, and in a few weeks it was green and like the rest of the lawn. I have examined the roots after the doctoring: it completely burns them out. I have tried it on large Dandelions with the same result. One of the young gentlemen here amused himself by hunting out the longest Thistles he could find to experiment on: the vitriol completely killed them by eating the roots out. Beginners are apt to err in using the vitriol too freely. Just one drop will do; and the stick must not be carelessly daubed on the grass, or it will leave its mark behind. Care is required that it do not touch the skin, boots, or clothes, and on this account it is not safe in the hands of children, but a man or woman with ten minutes' practice can kill Plantains much more quickly than any lad can eat Gooseberries.—J. WRIGHT.

SECURING WELL-FLAVOURED EARLY POTATOES.

THERE are numerous ways of obtaining an early dish of any vegetable with its natural flavour and other properties. I have tried many plans to shorten time and economise space—by putting a quantity of Potato sets into a shallow box and placing them in a vinery at work, likewise putting the sets in turf or moss, tied round with matting, to be started and afterwards planted where they were to be grown to maturity.

To have a few early Potatoes I have found the following system answer well. I plant my Potato sets in pots, say about 5 or 6 inches in diameter; the soil I use is a pure turfy maiden loam and charred earth, with a little soot. Being in pots they can be started wherever there is a little heat. While they are coming on in the pots, leaves and a little manure are put up in a round heap to ferment, then put into a pit or frame; after the bed is in a fit condition of heat the surface is covered 8 inches deep with half-rotten leaves. When the heat is up the pots may be plunged in this material, and the plants kept in the same pots till the young tubers are the size of large peas or small marbles. This can easily be ascertained by turning them out of the pots. I consider the chief advantage derivable from this system is, that as they are confined in the pots, only a limited supply of nutriment is afforded, which causes the plants to tuber much sooner than would otherwise be the case. Whenever I find that the young Potatoes are as large as I have stated I immediately take off the top soil the pots were plunged in. If I find the heat is deficient I add a little new warm manure to the inside of the bed, and turn it over. Then, having had some good, dry, turfy soil, and charred or burnt earth, with a mixture of a little soot, the bed is covered over to the depth of 14 or 15 inches; the Potato plants are next turned carefully out of their pots, and planted in a furrow in rows in the new soil after it has attained the natural warmth of the bed.

I never use any manure, but a little soil is put on the drills

after the plants are established. By keeping them near the glass, and well aired at every favourable opportunity, a good crop of fine natural-flavoured Potatoes will be obtained.—WILLIAM MELVILLE, *Dalmeny Park*.

THINNING-OUT SHRUBS.

IN all old places much labour must annually be expended in thinning-out or shortening-down shrubs. When Laurels have been used as nurses and screens for better subjects, much may be done by cutting-down and layering the outside branches, and pegging them down, so as ultimately to present a surface of evergreens 18 inches from the ground. There are many positions in which such an evergreen undergrowth would be superior to grass, and cutting once or even twice a-year would involve less expense than the weekly cutting of grass during the summer months.

Much thinning can be better done now than at any other period, when deciduous trees are leafless, as, whilst the leaves are on, one can see what one is doing, and judge of results better than after the leaves have fallen. For permanent effect, evergreens, on the whole, are to be preferred to deciduous plants, though on fine lawns, where they stand as single specimens, they cause a considerable amount of trouble in keeping the ground clean, as it is in summer that they gradually throw off their older leaves. In many places the common Laurel, to be kept healthy, requires frequent pruning, as otherwise the points are apt to become unhealthy and die. I would not scruple about cutting over-large branches of Laurels now, and would have no fear of the frost and wet of winter injuring them if the cut parts were daubed over with a dark paint, or even with soot, clay, and a little oil; but for the offensive colour, a stone-coloured paint would be best.

I knew of a case in which some fine trees, standing as so many ornamental pillars, with hillocks, and noble roots running on the surface as a splendid pedestal, were almost destroyed by painting the base of the trees and these large roots with tar to keep deer and other ruminants from them. The fierce heat of the summer's sun burned and carbonised the wood beneath the tar, and there was no passage of sap except in the part of the large roots close to the soil. A free use of limewash over the tar arrested the evil. The black paint—oil and soot—for smearing large cuts of shrubs and trees, is just as good as any in winter, and it soon becomes invisible, but a lighter colour is better in summer. In general the foliage keeps off the fierce sun in summer. This clogging-up of large wounds, so that the rains of winter may not percolate into the cuts, is of importance where free future growth is wanted. Numerous inquiries and expostulations have been made to the following effect:—We do not wish to be troubled with this thinning; we wish to have just as many trees and shrubs in our place as will reach their maturity without any thinning. That is just the reason why, when large expensive specimens are not used at once, so many little lawns present such a meagre appearance with small unhealthy trees and shrubs on them. Trees, like men, are fond of company, and after having tried single and thick planting, I have come to the conclusion that if a gentleman wishes a new place to be quickly and well furnished, he should plant his favourites at such distances that they will have a chance of ultimately filling the space allotted to them; but he should place other plants as nurses round the main plants, and prune and thin these out, so as never to intrude on the free air and the free branching of the principal plant. I am convinced that the favourite specimens will grow as much in ten years under this treatment as they will do in twenty or thirty years when each favourite plant stands fully exposed. In general cases the rule still holds good, "Plant thick, thin quick."—R. F.

INSECTS SHAPED TO THE NEEDS OF FLOWERS.—The flowers of the Yucca plant are peculiarly constructed, so that it is impossible for the pollen to reach the stigma, it being glutinous and expelled from the anthers before the blossoms open. It has been, therefore, the opinion that the plants must needs rely on some artificial agency for fertilisation. Professor C. V. Riley, of St. Louis, has lately discovered that the work is done by a small white moth which he calls *Pronuba yuccasella*, an insect which forms the type of a new genus. It is most anomalous, from the fact that the female only has the basal joint of the maxillary palpus wonderfully modified into a long prehensile spined tentacle. With this tentacle she collects the

pollen and thrusts it into the stigmatic tube, and after having thus fertilised the flowers she consigns a few eggs to the young fruit, the seeds of which her larvæ feed upon.

The *Yucca* is the only entomophilous plant known which absolutely depends for fertilisation on a single species of insect, and that insect is remarkably modified for the purpose. The plant and its fructifier are inseparable under natural conditions, and the latter occurs throughout the native home of the former. In the more northern portions of the United States, and in Europe, where American *Yuccas* have been introduced and are cultivated for their showy blossoms, the insect does not exist, and consequently the *Yuccas* never produce seed there. The larva of the *Pronuba* eats through the *Yucca* capsule in which it fed, enters the ground and hibernates there in an oval silken cocoon. In this stage the insect may easily be sent by mail from one part of the world to another, so that seed may easily be obtained from American *Yuccas* here without any trouble on the part of the gardener, simply by importing the *Pronuba* cocoon.—(Nature.)

SOLANUM CAPSICASTRUM CULTURE.

A DENSE compact habit of growth, clothed with foliage of a deep green, and with a profusion of bright scarlet berries dispersed very evenly amongst, and producing a most charming contrast to, the foliage; the lower branches drooping with fruit in winter, and almost concealing the pot from view, while the numerous higher branches rise to a centre in the form of a dwarf cone—such is a fair description of the appearance of a well-managed plant of *Solanum Capsicastrum*, and when thus seen there are few plants more beautiful or useful for in-door decoration during winter. It is an old favourite which I have so used for several years, and having just now thirty or forty nice little specimens in a very promising condition for the ensuing winter, it occurs to me that a word or two about them may prove useful to some of your readers.

Some seed was sown about midsummer last year; the seedlings were potted singly in 3-inch pots as they became large enough, and were shifted into 5-inch pots during the autumn. Watering, pinching-off any long straggling shoots, and screening from frost, were all the care bestowed till spring; then a bed was prepared in an open border by mixing a lot of manure, rough leaf mould, and sand with the ordinary, and in this instance very poor, soil of the garden. Into this the plants were turned out of the pots in April, sufficiently far apart to allow ample space for the season's growth, and water was given freely, and liquid manure occasionally, throughout the summer. Under this simple treatment the plants have grown with wonderful vigour. They were taken up and potted in September, and are now as fine a lot of plants as one could wish, very uniform in size and appearance, averaging fully 6 feet in circumference by nearly 2 feet in height. Some of the plants are even larger than this, having a spread of nearly 8 feet. The crop of berries is quite in keeping with the size of the plants, that of one plant, which I had the curiosity to count, amounting to nearly three hundred.

In lifting the plants from the summer bed care was taken to retain a little soil about the roots, in order that the check might not be so severe as to affect either the foliage or the berries. As they were potted, any crowded branches were separated and fastened to slight supports; but nothing like regular training or tying-out of the branches was attempted, nor, indeed, was it necessary, as stiffness and formality could only be the result of endeavouring to "train" plants that are naturally so well shaped.—EDWARD LUCKHURST.

SEEDSMEN'S ASSISTANTS.

It is perhaps not generally known, except to employers and employes, that during the spring months an assistant's average hours are from 8 or 9 A.M. until midnight or 1 A.M. for three or four days a-week, and before he can obtain so undesirable a situation years are requisite to enable him to become acquainted with the trade in all its branches. For a salary of from £50 to £80 per annum we are expected to keep up an appearance as respectable as clerks, who, though better paid, have far shorter hours. Whilst mechanics and the greater part of the assistants in other trades have obtained a considerable advance of wages to meet the present high price of food and clothing, also a decrease of hours, we, almost alone, as a class, have had no advance of salary; and during the summer and

autumn months, in which we have but little to do, we still continue to close at 8 P.M., whilst such general trades as grocers, drapers, &c., in many cases close at 6 or 7 P.M., having also a portion of one of the week days set apart for a holiday.—ONE OF THEM.

DAHLIA DODD'S MARY.

"HAVE you seen Dodd's Mary?" was a pertinent query among "the ancient gentlemen who hold up Adam's profession" in England, some forty years ago. I have no doubt, Mr. Editor, but what you have, and remember "her endearing young charms," as well as your correspondent does. However that may be, I nevertheless have seen the veritable Dodd's Mary, then "in the pride of youth and beauty;" now "all faded and gone." I was then a youthful aspirant for floral fame; a hopeful tyro in the art of horticulture, when my preceptor started me off one bright May morning, with half a guinea in my pocket, in quest of the subject of this letter. The distance I had to walk was some eighteen or twenty miles, to a nursery near Leeds, in Yorkshire. I well remember the kind-hearted proprietor inquiring how far I had come, and asking if I was not hungry and fatigued. I believe I confessed to feeling a little so. At any rate I breakfasted with Mr. Major, his family, and Miss Mary Dodd, who was then on a visit there.

With a face beaming with good nature Mr. Major addressed the young lady, saying "the young lad who was seated with them had come to buy Mary Dodd, or Dodd's Mary, one or the other, and for which half a guinea was offered." With a ready apropos she replied that "the sum named was a fair equivalent for Dodd's Mary, but would not buy Mary Dodd, who was a jewel beyond price." So it was decided that the other Mary was the one on sale, which was duly bought and paid for. After carefully packing up, we started off towards home. "All's well that ends well" is a trite aphorism. And so far all seemed to have gone well, as we journeyed onwards, Dodd's Mary and I.

It was my misfortune to overtake a so-called "Mammoth Circus Company," which had halted at a roadside tavern "to dress," and refresh themselves with copious libations of gin and ale, so as to make a "grand and imposing display" on entering the little town in the distance. I of course, boy like, waited until the "brilliant and gorgeous spectacle" was ready to advance, and keeping pace with the "immense cavalcade," witnessed the "triumphal entry" of the "talented troupe of world-renowned artistes," on their "richly caparisoned and highly trained steeds." I kept pretty close to "Mr. Merryman, the fun-poking clown," who with a face as funny as Grimaldi's, was mouthing and mimicking, with all the strange facial grimaces, "from grave to gay" that the most accomplished of "merry Andrews" was capable of.

"From windows lassies looked a score,
And neighbours met at every door,"

to enjoy the passing fun, as now and again "the great buffoon" gratuitously treated the gathering crowd to several "feats of agility," such as "throwing lofty somersaults and flip-flaps on his bare-backed horse."

Mounted on a milk-white steed was "a maid in all her charms," in the assumed character of Lady Godiva, and who seemed so beautiful and fair, that I innocently wondered whether she was really a woman or an angel. Alas! poor mortal, as she proved to be, she fell from her horse; "drunk as a lord," somebody said. Poor Lady Godiva! how I pitied her, as the "gay cavaliers" dismounted from their prancing steeds, and "rushed to the rescue." As "the gallant knights" charged through the ranks of gaping rustics, we, Dodd's Mary and I, were jostled and tumbled together with the prostrate Lady Godiva.

During the "rough-and-tumble" time which followed, I had tenaciously held on to my charge, until a clodhopper's hob-nailed boots crushed the hand that vainly strove to save from danger the much-prized Dodd's Mary, who was literally severed in two. In less time than I have occupied in telling the troubles that befel us, I was outside the crowd, shedding tears either from the pain of my lacerated hand, or sorrow at the sight of the poor mutilated Dodd's Mary. In the meantime the fallen though fair daughter of Eve, *alias* Lady Godiva, or my "angel in muslin," had changed her rôle; was transformed to "the Queen of Beauty," and, seated on the top of "the golden chariot," among the musicians, looked none the worse for the fall, but, if possible, seemed more imperiously

beautiful still. In a short time the cavalcade moved on to the sound of "music's soothing strains," while I was left lamenting. With a heavy heart I made the best of my way home, and there "poured forth a sorrowful tale." On examining the condition of the tender one whose existence was in jeopardy, I was pleased to hear them pronounce the case not so bad after all; it might have been worse, for "while there was life there was hope," and that with care and good nursing all would be well again. Such a favourable report seemed to act upon my saddened feelings like mercury in the sun, which rapidly rose up from the zero line to the one-hundredth degree of happiness again.

Such, good readers, was my rather strange and ludicrous adventure with the subject of this letter, "when we were first acquaint." My *protégé* was soon convalescent again, and increased in comeliness of form and stature every day. We watched our tender charge with every promise of soon realising in the budding beauty all the charms of matured loveliness which were about to unfold. In due time, like a peerless flower, as she undoubtedly was, her unrivalled charms seemed to fascinate all who beheld her matchless beauty. I well remember how delighted I was with the sight of the first open flower, which was a marvel in those days. Floriculture has made rapid strides in the march of improvement since then, with Dahlias especially.

Horticultural exhibitions, or flower shows as they were generally called, were not so grand as now. The Dahlia, at the time of which I write, was one of the chief objects which engaged the attention of both professional and amateur growers, and contributed most to the floral displays of the country shows of that period. Recollection goes back to the time when single and semi-double Dahlia flowers were exhibited and obtained premiums. A single variety, the Paragon by name, was to be seen in every good collection.

Perhaps the readers will smile at the simple tastes of our forefathers in gardening in those days, but let me add one word in testimony of the merits of the Paragon. Of all the single flowers of its kind, it was true to name. It was a paragon in every sense of the word, and I think should not be despised at this day. The colour of its evenly-formed long-pointed petals, which radiated from a golden centre (button-eyed they were afterwards called, from the supposed resemblance they bore to a brass button), were dark purple margined with a lighter shade, and it was really a pretty flower. *Sulphurea Elegans*, a large shaggy kind, was the best of the yellows (would be considered the worst now). *Mary Queen of Scots*, a small lilac-coloured kind, and, like her namesake, had some pretensions to beauty. *Jones's Diogenes* was a scarlet wonder, while *Anemonæflora* was a small, passable purple flower, and somewhat resembled an *Anemone*. *Queen of the Whites* was by no means so queenly a flower as her name would imply, semi-double, with long compressed petals. *Beauty of Ackworth* was a flaming scarlet with a full centre, was showy and pretty good. The *Queen of Sheba*, in royal purple, was a regal flower; while *William and Adelaide*, a kind of floral sport, was the wonder of the day, "having flowers of two colours on one stem," as the catalogues informed the public. The *Florist's Delight* was curious if not delightful, with its fawn, straw, buff, and yellow-shaded flowers, *vide* catalogue of 1831-2. *Wells's Eclipse* was a much better flower, and certainly eclipsed all the foregoing kinds, until *Springfield Rival*, a handsomely-formed dark purple well-cupped flower, outrivalled all its competitors. But the great marvel of the day was the floral phenomenon *Dodd's Mary*, whose exquisite beauty overshadowed all her predecessors.

A deep cicatrice on my right hand from "the honourable wound" I received when I shed my blood in defending *Dodd's Mary*, remains to remind me of the time when Dahlias were "all the go" in times gone by. Turning back the leaves of memory, the mind's eye plainly sees a Dahlia show held in a country town in England in the year of grace 1831, where the above-named varieties were exhibited, and the first premium was awarded for the twelve best flowers to my instructor in horticulture; and the first also for a single specimen of *Dodd's Mary*. — T. HARDING, *Nonantum Hill, Brighton, Mass.* (in *Gardener's Monthly*.)

[This Dahlia was raised by Mr. Dodd, gardener to Lord Montague, at Slough.]

SALE OF ORCHIDS.—Five hundred lots of imported Orchids were sold by Mr. Stevens on the 17th inst.; they realised

about £520. *Odontoglossum vexillarium* var. *giganteum* sold for £5.

ELECTION OF ROSES.

CIRCUMSTANCES have prevented my replying earlier to the Rev. C. P. Peach. I see that he is already engaged on the Strawberry election, and I will gladly undertake the duty of returning officer for Roses.

The questions I propose to put are the following:—

1. Restricted to one Rose for all purposes, which would you select? I am disposed to think that the voting on this may bring out some Roses that a few amongst us might not consider amongst the best twelve.

2. Name what you consider the best twelve Roses in cultivation amongst the Teas and Noisettes.

3. Name what you consider the best fifty Roses in cultivation, and underline out of this fifty those you consider the best twelve.

I shall be happy to receive replies from any rosarian, or the more modest Rose-grower. The poll will close about the end of November; but as the returning officer here may examine votes at once, the sooner any of the readers of "our Journal" choose to send their lists the better.—JOSEPH HINTON, *Warminster*.

JOTTINGS ON THIS YEAR'S GARDENING.—No. 2.

THE POTATO DISEASE.

To avoid the disease, let us plant a frame under precisely the same conditions as those laid down in my previous article, and treat them in an exactly similar manner until the haulm is strong and tubers have begun to form; then put on the lights. Do not raise the frame, but tilt the lights. Do not give more water than is required to keep the plants in a healthy state and secure the swelling of the tubers, and admit no rain. The leaves will die-off yellow, the tubers will be sound.

The question will be asked, Have I tried these experiments? The first I have not in the way named. It will be said, Then how do you know it will result in disease? My answer is, that by keeping a Potato wet by frequent sprinklings overhead, giving heavy waterings to those grown in frames, keeping the soil wet and the atmosphere close, warm, and moist, we retard ripening, increase and prolong the vigour of the plant, and such a course continued long enough will result in disease, as I have noticed on more than one occasion. What results in disease in one case must be equally, if not more, effective in producing it when the treatment is such as in a higher degree to predispose the plant to an attack.

It may be urged that the Potato disease occurs in a dry as well as in a wet season. Admitting that there may be such instances, it will be found that when the disease prevails in the so-called dry season the weather was wet for a considerable time, the atmosphere surcharged with moisture, the range of temperature very little owing to cloud, that there was scarcely any dew when the Potato crops had arrived at their maximum of growth, when the whole vital forces of the plant are concentrated on the growth and ripening of the tubers. It seems to be altogether forgotten that the Potato is a tuber, requiring a tuber's treatment—i.e., a season for growth, needing moisture, or rains, and heat, and another for maturing that growth, requiring a gradually diminishing amount of moisture—in fact, dryness and full exposure to light and heat. Plant a Potato when and how we may, it will grow until it has attained its full size. More it will not do, nor can all the art of man make it. Up to this stage it does not matter what the state of the weather may have been as regards moisture; only, if the season has been moist and congenial, the plant will be considerably stronger in growth than if the contrary had been the case. Up to this stage the plant's energies are directed towards growth, after this to the swelling and ripening of the tubers. If the weather is dry the crop will be of finer quality and free of disease; if wet, and such as to promote growth, the crop may be heavier, but the quality will be inferior and diseased.

Again, the disease is not uniform in its effects. Some crops are much diseased, others not at all or very little, and this in adjoining localities. The cause is not inexplicable if we will only stoop to examine the conditions of soil in each case. Where the disease is worst, is the soil not full of humus? Where it is not found, or not extensively, the soil is dry; the water passes away both by percolation and evaporation more freely, so that the ripening process is not injuriously affected.

Then we have kinds proof against the disease—for instance,

Red-skinned Flourball. It will be found that the varieties most liable to disease are the driest and most mealy, which from the farinaceous matter they contain are the most valuable, whilst those freest of the disease are such as, compared with the others, are mere waxy lumps when cooked; they do not contain so much starch as the kinds of superior cooking qualities, hence they are not acted on so injuriously by a continuance of wet weather during the ripening, or rather swelling period, and they seem to attain an increased size. Varieties of this class are the Red-skinned Flourball, Early Rose, Boninia, and most of the coarse, large, very watery Potatoes. Last year the first-named was diseased, this year the second, proving that though a variety from some cause may escape, generally from drier soil or better climate, it will nevertheless be attacked. That dryness exerts a great influence when the conditions are favourable to disease is evidenced by some rows growing on a garden border. From the row next the wall the wet is thrown off by coping-boards, and it also receives the benefit of the heat radiated from the wall; it is not diseased, while of the same kind only a few feet off, but wet from rains, more than half the tubers are diseased.

Cutting off the tops or haulms of the Potato when the disease first appears in the leaves has been recommended. This, as we all know, if practised on the first appearance of the disease and before it has extended to the tubers, will save these from the malady. This proves that the latter has its origin in the leaves or stems. It has, therefore, been attributed to electricity; but under the same electrical conditions the Potato under glass, protected from rain, ripens off perfectly free from the disease, while out-door crops are disastrously affected. It may be contended that by growing Potatoes under glass we throw off the rain which may bring down the fungus. Is it not rather that the plants under glass are placed under conditions favourable to their ripening, whilst those out of doors are exposed to wet, which induces growth instead of ripening? Instead of removing all the tops by pulling them up, let it be only partially done, and have we not the disease? The tubers in the one case are free from disease but are not ripened; in the second case they are diseased but attain a higher state of ripeness—they are not nearly so waxy nor so unpalatable as those having the tops wholly removed.

Potatoes which are waxy when taken up, in consequence of the haulm having been cut off, attain a tolerable degree of meanness on keeping, just as sorts naturally waxy become more mealy after having been kept dry for a considerable time; indeed most of the kinds that at storing time are not mealy improve if kept a considerable time, and are often quite mealy in spring. On the other hand, kinds that at taking-up time are fit for immediate use become waxy after a time.

I have contended that the disease was a consequence of taking up the tubers before maturity, and keeping them too long exposed to the atmosphere. This does weaken the Potato, tends to earlier and diminished production, but it is in this direction that we must, in my opinion, look for freedom from the Potato disease. Allowing Potatoes to remain in the ground after the skin is set is not desirable, for doing so does not contribute to the ripening of the Potato, nor to the earlier growth and ripening of the next year's produce, but retards both. Freedom from disease or otherwise is to be expected, not from the lateness, but earliness of the crop in arriving at maturity. So far back as 1834 it was noted that the evils besetting the Potato crop were a consequence of taking it up before the tubers were mature. Strange that we in 1872 should have found that it is the only means of securing the Potato from those disasters it was said then we were drifting to. We have for many years been endeavouring to insure the more thorough ripening of the Potato tuber, and in doing so its more early growth and ripening, and it is that very thing we find will save us from the disease—that is to say, the early planting of those kinds which come soon to perfection, so as to secure for them the greatest heat of our climate during the ripening period. Either we must do that—plant early, and early sorts—or if we will plant late kinds, and have them free of disease, we must grow them under glass in order to throw off the rains. We may, instead, take up the tubers before they are ripe, and content ourselves with this food in a waxy state during the greater part of the winter; in this case we have only to pull up the tops or haulms, allow the tubers to remain in the ground until the skin is set, and then store them. Thus, by planting early kinds early we secure mealy Potatoes in July and onwards, and when they become waxy, as they will do from their early growth, they are succeeded by the late sorts,

which, though waxy when taken up, are by that time preferable, and which from long-continued early taking-up attain maturity at an early period.

My experience dates from a time when the Potato disease was considered to be unknown; previous to 1845, however, I gathered Potatoes that were completely decayed to the extent of three parts of the crop. In those days there was such a thing as the "dry rot," a thing now unknown—a result, I believe, of planting diseased tubers, or those whose eyes were destroyed by the disease. In those days it was not uncommon to take from the same field a crop of Ashleaf Kidney that was cleared off at the end of June or early in July, and sold as "new" Potatoes at one of our greatest manufacturing towns, and then plough the ground, placing the haulm of the previous crop in every third furrow, put in the sets on these, and cover with the soil of the next furrow. The produce formed the sets for the next year's crop. This system of cropping, which I know was practised for many years, was given up two or three years after the disastrous seasons of 1845 and 1846, if I remember rightly in 1848, when the second crop was a complete failure.—G. ABBEY.

THE UTILITY OF PRUNING.

THE object of the cultivation of fruit trees in the present day is to obtain from a given extent of ground as great a pecuniary profit as possible. The question is, Do those trees which are properly tended, but at the same time unsubjected to any kind of pruning, give this desirable result? Nobody has asserted that trees treated in this way are incapable of producing fruit, and even good fruit, provided they belong to good varieties. In this respect they obey the great natural law which ordains that each organic body should, within certain bounds, reproduce itself by means of seed. But it is of little consequence to nature that these seeds be enveloped in a more or less fleshy covering; whilst for us, on the other hand, this pulpy matter is the important part of the majority of fruits, and we are always trying to increase its quantity. In order to effect this, we take advantage of the power which fruits have of drawing to themselves the sap from the roots; the leaves, however, also possess this property, and we accordingly are obliged to lessen the absorbing capabilities of these latter for the benefit of the former.

The different modes of pruning, such as the pinching of the shoots, give us this result. By this means we divert a considerable amount of the sap which would have otherwise gone to form woody, and to us useless tissues, into the direction of the fruit. These mutilations, however, if committed during the summer, should not exceed certain limits, for the leaves are those organs which give rise to the yearly layers of wood, bark, and the new roots absolutely necessary for the circulation of the sap. The skill of the performer, in such a case, lies in making use for the formation of woody tissues of only as much sap as is essential for the production of a framework already determined, and for the maintenance of the annual existence of the tree; all the sappy fluid over and above should be directed to benefiting the fruits. Another style of pruning, which also tends to heighten the body of the fruit, is that of cutting off every year, during the resting-time of vegetable life, a certain portion of the branches developed in the summer. The consequence of this is, that the sap being obliged to act within narrower limits, each fruit is better nourished and grows to a greater size.

The trees which are not made to undergo pruning give fruits which, if they are not very fine, are sometimes very abundant. But this abundance of fruiting is almost always subject to a somewhat regular season of intermittence, when a very plentiful year is nearly invariably followed by a very barren one. Everyone knows that this irregularity of production is due to the fact that during every abundant year almost all the sap is expended in the development of fruit, and that it has not been sufficient to elaborate new flower-buds for the following year. But the methods of pruning, if properly carried out, have succeeded in causing this inequality to vanish. The economising of the sap which is effected by the winter pruning, the disbudding and the pinching during the summer, allows the tree to develop its fruits sufficiently, and to make ready the produce of the following year. It is thus, then, that an almost equal number of flowers are obtained every year.

What we have just said seems to show us plainly that pruning has for its object the encouragement of the increase in bulk of our fruits, and the enlargement of their amount for the same

extent of tree-framework. But this operation has an equally great importance when viewed from another point; this is the giving to the framework of the trees a shape suitable for the position they are intended to occupy. It may be mentioned that over a great part of our country many species and varieties of our fruit trees, such as the Peach, the Apricot, certain kinds of Pears, and the Vine, can only yield satisfactory crops when sheltered on walls exposed towards a favourable quarter. These shelters are expensive to erect, and one should therefore strive to obtain from the expense as much produce as is possible. In order to effect this, it is necessary that the framework nailed to the wall be trained along it in such a manner that not only do

the branches occupy regular intervals over the whole surface, but each one in addition may be furnished with shoots throughout the whole of its length. But if the wall trees be not pruned, and the grower content himself by merely fastening the branches against the wall as they increase, they will be very far from occupying regular spaces upon the wall; and, on the other hand, as each of the branches is allowed to grow larger every year without restraint, there will be numerous gaps in the order of fruiting branches they ought to carry. Pruning very effectually prevents these two inconveniences.—A. DU BREUIL.
(*Revue Horticole*.)

(To be continued.)

DR. WELWITSCH—WELWITSCHIA MIRABILIS.

THOSE who are in the habit of attending the meetings of the Royal Horticultural Society at South Kensington, and have but very lately seen Dr. Welwitsch there in apparently good

health, will be both surprised and sorry to hear that he died on the 20th of this month at his apartments in Fitzroy Square. In opening life, a legal career having been marked out for him,



Welwitschia mirabilis.

he was obliged to study law, but ultimately forsook it to study medicine, for which he had a greater inclination. By so doing he displeased his father, and suffered much inconvenience in consequence of the latter refusing to supply him with the money necessary for the continuance of his education. He took a medical degree at Vienna, and for some time devoted himself to the practice of his profession. His botanical propensities, however, were not to be suppressed, and at length, throwing up medicine, he abandoned himself to the unrestrained indulgence of them. Whilst on a visit to Portugal he had the good fortune to attract the attention of the Government, and was appointed their foreign botanical collector. In this capacity he went to Angola in 1853, where he remained nine years, making most laborious observations on the physical geography and natural history of that region, the results of which he has given to the world in a number of articles communicated to various scientific journals, both English and foreign.

In order to compare and classify the numerous specimens which he had collected during this time, Dr. Welwitsch came to England, where the numerous and excellent museums afforded him better opportunities of so doing than could be obtained elsewhere. During his stay in England he rendered great assistance towards perfecting the work described as the "Flora of Tropical Africa," by lending those specimens of plants which he had collected in that quarter of the globe. These specimens of the flora of the western coast of Africa are held to be of great value, and our readers will be glad to hear that England is likely to possess two sets of each. In course of his travels on the western coast of Africa he discovered a gigantic terrestrial Orchid and a gigantic umbelliferous plant. He was also the first to record the existence of the unique plant that bears his name, and of which we here append a description.

It is now nearly fourteen years since this extraordinary plant, the very name of which will, no doubt, be unknown by many of our readers, was first brought under the notice of the scientific world. Dr. Welwitsch, whilst travelling through Southern Africa in 1859, discovered it growing among sandy tracts of land, exposed to the most intense of a tropical sun, and but rarely moistened by rain. As far as is at present known, its home is in portions of land of this description lying between the fourteenth and twenty-third parallels of south latitude.

At first sight there is but little likeness between its external appearance and that of any other vegetable with which we are at present acquainted. Dr. Hooker, however, after subjecting it to close botanical examination, assigned it a position among the "Gnetaceæ," the highest order of the naked-seeded exogenous plants, such as the Conifers and Cycads, and some individuals of which show very close affinities to the lowest forms of covered-seeded exogens, as the Beefwoods and Birchworts. The stock or stem rarely rises to more than a foot above the ground. It is narrow at the bottom, but gradually expands at the upper part as it grows higher and older into an irregularly-shaped basin, which varies in diameter according to the age of the plant. Roughly speaking, its shape is not unlike that of the cap of the *Polyporus squamosus* fungus, and on the inside presents an uneven wrinkled appearance, caused by the projection of the concentrically-arranged layers of wood. These, if split open, have a dull red colour and granular-looking texture. The leaves are nothing but two long green strips attached to the edge of the dilated portion of the stem at opposite sides, and even when the plant has attained to the age of a hundred years do not exceed 6 feet in length. Whilst still young they become torn by the heat and wind, and in this tattered condition, dragging over the burning sand, nevertheless continue to per-

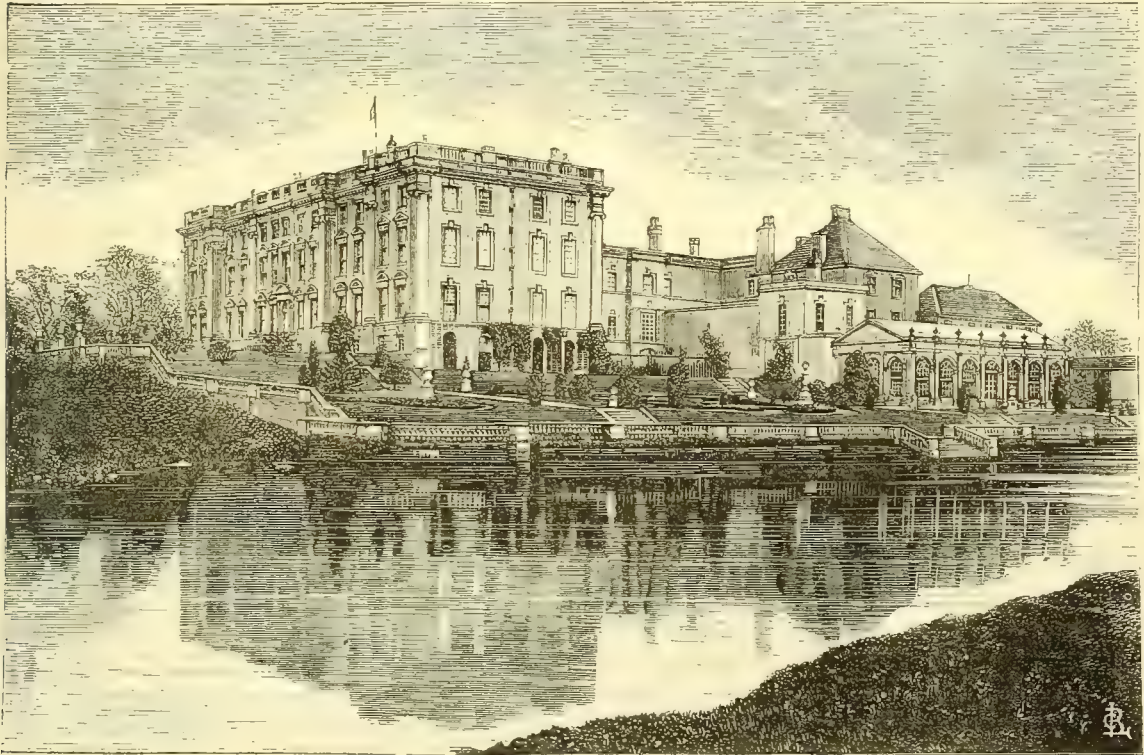
form their functions. The cones are borne singly upon the branches of the two-forked flower-stalks, which are set round the edge of the expanded portion of the main axis. They are

of a bright red colour in their natural state, and about the size of a Date. Several specimens of this interesting plant can be seen in the museum of preserved woods at Kew.

STONELEIGH ABBEY, THE RESIDENCE OF LORD LEIGH.

THE poetic feelings with which the people of most countries regard a favourite river are likely to go down to all time. The German emigrant melts into tears on hearing in a foreign country the songs of his fatherland in which the all-important

Rhine bears a part, while the Hindoo regards his Ganges with the greatest veneration, and the poor oppressed Egyptian his Nile, the latter, perhaps, more on account of the benefits it confers than from the higher feelings inspired by song. Such,



Stoneleigh Abbey.

however, is not the case with some of the streams in our country. Our northern neighbours have their Tweed and Clyde, the first-named, especially, has been the theme of song and romance through many centuries; while in England who is there that is not proud of the Avon, rendered immortal by the bard whose works are read in every land where English is spoken? Though in point of importance as a river containing a large volume of water, or traversing a district full of romantic beauty, the Avon has no particular claim to notice, yet the soft and sylvan beauty of the country it passes through, presenting rich meadows and shady woods, few rivers can excel it. Rising in what may be called the watershed or backbone of England, it meanders through large tracts of that high table land which constitutes the centre of the kingdom, passing in its course southward to where it joins the Severn many place of note, amongst others that which forms the subject of the present notice.

Stoneleigh Abbey, the palatial residence of Lord Leigh, is one of the largest and finest mansions our country can boast of, and, as its name implies, occupies the site of an ancient religious edifice, the only relics of which that now remain being a gateway and adjoining buildings, converted into a dwelling for Mr. Elworthy, the gardener. This is within a stone's throw of the main building, and forms the entrance through which carriages pass to the mansion. A noble and capacious arch it is, of the period when so much that we ought to be proud of was erected in the various parts of our land, more especially by the religious orders, which exercised such great influence. Internally, I believe, the building occupied by Mr. Elworthy has been modernised. The windows

retain their original form, and the whole is covered with Ivy, giving an appropriate character to a building that perhaps some meddling hand of the last century might have deprived of its antiquity by alteration. I could not, however, be sure of this, as the dense coating of Ivy, than which nothing could have been in better taste, covered all. I noticed with what care the fragments of columns, carved capitals, corbels, and other relics of the old edifice are preserved; they were carefully arranged where they could be seen by the passer-by without being obtrusively brought forward.

The mansion, of which the accompanying is a representation, is large and commanding, and occupies a position in the midst of a park of unusual size, rich in the quality of the land and in the abundance of large and ancient trees. It is watered by two streams, the Avon and the Sow, which, I believe, unite in the park. Entering from the Kenilworth side, the traveller on alighting at the station is directed by a footpath through fields, which eventually leads him into a wood bordering the park, and it is here that we find evidences of our being in the neighbourhood of the seat of a wealthy landowner; for the footpath is not of that tortuous character better fitted for poetry than comfort, and it is neatly gravelled, besides being skirted on each side with evergreens. These are Laurels, and they looked well, and did not appear to have suffered so much by the frosts we had four or five years ago as others did in Kent at that time, while their presence indicated that rabbits were not so much encouraged as at some places. They must give a lively appearance to the woods in winter, and as such shrubs are to be had at a very reasonable rate, they might with advantage be planted in many places.

where they could not be otherwise than pleasing objects. Who does not like to behold a Holly in winter? and without wishing to deprive the Holly of its supremacy as a winter ornament, the Laurel, Laurustinus, and Rhododendron, as well as some Berberises, might be added with advantage.

The footpath referred to leads into a highway from which one soon enters the park, crossing about the same time one of the two rivers; and once within it, on looking right and left, one is impressed alike by its vast extent and the abundance and healthy appearance of the timber, the grass land that would in the eyes of an east-country farmer carry almost any number of sheep and cattle that might be put upon it, with trees singly and in groups, and a wide river passing through it in a tortuous course, its banks scarcely visible at more than 100 yards' distance, the ground being so nearly level. On passing onwards the top of the mansion is visible over the trees that intercept the direct view, and taking a well-kept carriage road of ample width, coated with gravel of a colour that would make the mouth water of many who pride themselves on their well-kept pleasure grounds, we reach the portals of the old monastic building. Having made the acquaintance of Mr. Ellworthy, I was then conducted through the various departments more immediately under his care.

In a domain like that of Stoneleigh there is much to attract the visitor. The first view, and a more careful inspection, alike impress one with the idea that the place is no ordinary one, and has not been created within a few years. Trees of the largest size stud the extensive park in well-arranged groups. Once within the park its outer boundary is not easily seen, for trees conceal the fence, while here and there suitable openings carry the eye on to greater distances, leaving the imagination to guess how much of that distance is park.

The position of the mansion, on a knoll near the more important of the two rivers, is well chosen, and is a proof of the sagacity of the early founders of the place in securing an abundant supply of water. At the same time it was most likely concealed by the forest which, there is reason to believe, surrounded this religious edifice in the early part of its history. Coombe Abbey in the same county is similarly placed, so is Combermere Abbey in Shropshire, and Fountains Abbey in Yorkshire; the latter, however is in a very low situation and surrounded by high hills, still confirming the popular notion that concealment and a desire to be near water formed a prominent feature in dwellings of that character founded in Norman times. In Warwickshire, in addition to the noble residences of Coombe and Stoneleigh, Whitley and Wroxhall would also seem to have had a like foundation, as well as Warwick Priory; while the historical associations which such places as Kenilworth and Warwick carry with them indicate that we are on ground rendered highly interesting by events that occurred some four or five centuries ago.—J. ROBSON.

(To be continued.)

THE ROCKERY.

(Continued from page 253.)

HERBACEOUS AND ALPINE PLANTS, Continued.

Linum flavum.—Not very hardy, but in dry situations it stands the winter.

Lotus corniculatus flore-pleno.—Dwarf. Pretty flower.

Mimulus moschatus.—Sweet-scented.

Mimulus monstrosus.—Free-flowering. A great diversity obtained from seed.

Myosotis dissitiflora.—Good when true. This requires a shady and moist position, and so does the flowering *Mimulus*.

Trises.—There are several species well deserving a place, especially as some of the evergreen kinds look well all the year. Among the latter a variegated one is very useful. They also do very well in a dry situation.

Gnaphalium arenarium.—The double yellow Everlasting of the shops, so much used for immortelles, &c. A dwarf-growing pretty plant.

Nepeta violacea.—A too rampant-growing plant for most places, otherwise pretty and continuous-flowering, more so than most herbaceous plants.

Eriogonum macrocarpa.—A dwarf pretty-flowering plant, well adapted for rockwork. Some other species of like habit are also good.

Orobanchis vernus.—Perhaps rather tall, but good.

Oxalis corniculata rubra.—A pretty brown-foliaged plant of low growth, and perhaps of too easy culture, being apt to overrun other plants.

Phlox.—*Subulata*, *setacea*, *nivalis*, and *verna* are all dwarf and good spring-flowering plants, the first and last being very

pretty. They also like the shady rather than the sunny side of the mound.

Primula.—There are so many varieties of this all more or less valuable, that no spring display can be complete without them. I may here, however, observe that the single varieties are in general as good as the double, and much easier to grow. The shady side of the mound suits them best. Perhaps the *Auricula* might prefer the sunny side, but all the others like the shade.

Prunella optima or *pyrenaica*.—Pretty dwarf plants with purple flowers.

Pulmonaria officinalis.—A pretty spotted-leaved plant, looking well in autumn.

Sage.—The Golden-variegated Sage makes an excellent edging, but is liable to get too rampant for the rockery. There is a tricoloured one, also showy, but both are rather coarse.

Sanguinaria canadensis.—A pretty dwarf plant, but little grown.

Saponaria ocymoides.—A pretty compact plant.

Silene Schafta.—A neat-growing plant with abundance of pretty pink flowers.

Soldanella alpina.—A little gem, having bright shining leaves.

Spergula pilifera.—The rockery is the most suitable place for this, and it well deserves a position there.

Spiraea japonica or *Hoteia japonica*.—A plant no less to be admired for its foliage than for its beautiful spikes of flowers. It is quite hardy.

Stipa.—Feather Grass. Pretty.

Santolina incana (Lavender Cotton).—Though tall, may nevertheless be kept dwarf by cutting-in, and its silvery foliage has an ornamental appearance.

Saxifraga aizoon minor and *major*.—Dwarf plants with silvery-grey foliage, of neat compact habit.

S. cespitosa hirsuta.—One of the evergreen class, very pretty.

S. hirta.—Also an evergreen Moss-like plant.

S. Stansfieldii.—One of the neatest and prettiest of the class, resembling a Lycopod.

S. pectinata.—Foliage more silvery-grey than *S. Geum*, but from its neatness it is a favourite.

S. Bearii.—Pretty silvery foliage.

S. tenella, also pretty.

S. capillaris.—Dwarf and pretty.

S. cespitosa hirsuta.—One of hypnoides class.

S. hirta hirsuta.—Ditto.

S. hypnoides.—More spreading than some.

S. Geum.—Round leaved, more like London Pride.

S. oppositifolia.—A very pretty flowering species, good and showy. It likes a moist place and peaty soil.

All the above are dwarf, from 3 to 6 inches high, some of them scarcely that.

S. calendulacea.—A tall species with leaves as large as the largest Cabbage Lettuce, but being evergreen and not of rampant growth, it is well worthy of cultivation.—J. ROBSON.

(To be continued.)

POTATOES DISEASED AND UNDEASED.

I AM very glad that I have a rather more favourable report to give than some of your correspondents, for my crop of Potatoes this year has been on the whole good.

The sorts which I have grown here are Rivers's Royal Ash-leaf and Myatt's Kidney, for my first lot. I had them all dug about the middle of June, a good crop, and free from disease. For my general crop I have grown Red Regents, White Rocks, Suttons' Red-skinned Flourball, Flukes, and Dalmahoyes. The Red Regents, White Rocks, and the Red-skinned Flourball are free from disease and a good crop. The Flukes and Dalmahoyes had a few diseased tubers amongst them, but the latter I consider a first-class Potato; in fact, deserving the name of flourball.

Last season I planted a sort called Skerry Blues, well known in this district, but I found them inclined to disease, so I discarded them; and I am very glad I did so, for a neighbour of mine planted some, and he informs me his crop is not worth taking up.

I am afraid we shall not be able to find a cure for the Potato disease, but we ought to use all the means in our power to keep out of its way, as by early planting and taking up the tubers as soon as they are ripe, and also by studying what sorts of Potatoes suit the different soils. Potatoes should all be planted by the end of March—it is said he who leaves his Potatoes unplanted until April, is an April fool.—J. ANDERSON, the Gardens, Hill Grove, Kidderminster.

THE Potato crops about here have been very bad. I had about one hundred square yards planted with White Radicals,

which have been very much diseased. I did not obtain above half a load of good ones out of the whole crop. The ground is nearly all clay, and in one part some ashes were dug in, and I found that the Potatoes were almost free from disease. I should like the opinion of some Potato-growers whether fine ashes mixed in the clay would not improve the soil for Potato culture.—D. THORNER, *Denton Rectory*.

NOTES AND GLEANINGS.

THE ROYAL HORTICULTURAL SOCIETY'S SHOWS next year will be January 15th; February 12th; March 5th and 19th; April 2nd and 16th; May 7th, 21st, and 22nd; June 4th, 5th, 6th, and 18th; July 2nd and 16th; August 6th and 20th; September 3rd and 17th; October 1st; November 5th; December 3rd.

— UNDER the popular name of SPANISH OYSTER PLANT Messrs. Stuart & Mein, nurserymen, Kelso, have cultivated largely the *Scolymus hispanicus*. In Spain the roots are much used as a kitchen vegetable. They require to be boiled two hours before they are thoroughly tender. They are delicately flavoured.

— WE notice that the ALEXANDRA PALACE COMPANY advertise FLOWER SHOWS to be held in May, June, and July, and an International Fruit Show in August, 1873. From this we may infer that the Alexandra Palace will be open to the public in May next.

— THE following is an extract from a letter we have received from the banks of the Tweed:—"You have no idea what sort of weather we have been having; at this moment it continues to pour. Some corn is still out, and what is in stack is in a pitiable state. Turnips are perished, and are nothing but tops. Potatoes are not worth lifting, and the prospect for the poor is anything but cheering. If the rain do not cease no autumn Wheat will be sown."

— AN American paper states that the old ELM TREE under which Washington took command of the armies of the United States is still standing at Cambridge, Massachusetts, with an iron railing around its ancient trunk, and a granite monument beneath its branches, but is beginning to show the effects of old age. Recently one of its largest branches, measuring upwards of 30 feet in length and a foot in diameter, fell to the ground. The venerable tree will soon disappear with other relics of the revolutionary period.

SOME PREDATORY INSECTS OF OUR GARDENS.—No. 37.

BEFORE entering upon the main subject of this article, I may allude with some measure of satisfaction to the complete exoneration of the insect tribes from having any part in bringing about or fostering the Potato disease, which is clearly shown to be of a vegetable character. No doubt, various species of insects appear upon the plant, or attack the tubers independently, or in connection therewith, but in the case of the particular sufferers by this malady, insects when they visit them act rather as wholesome scavengers and destroyers of the offensive and decaying. Worthington G. Smith, Esq., in his interesting paper upon this disease, has, though only professing to execute a compilation, brought out some new facts and set old ones in a stronger light.

The interesting account of the purple-leaved variety of the Birch, which has recently been published, renewed the wish I have long felt, that this tree were more largely used for ornamental purposes in our parks and pleasure gardens. It is one of those trees which, for my own part, I cannot see would be objectionable planted upon lawns or in suburban gardens, where it would be in proximity to flower-beds, though I am aware that many think differently, and oppose the introduction of trees or shrubs of size amongst flowers. The Birch is, however, so light and airy a tree, that its shadow could hardly prove injurious to any plants beneath it, and the cultivation of it is evidently progressing in the south, where Loudon's objection to its admission into the ornamental garden—namely, that it is too common in its wild growth, does not apply, though valid enough as regards its cultivation in Scotland. To some persons who have seen it in its Highland solitudes, its graceful form in the garden is a pleasing reminder of days spent

"Where weeps the Birch with silver bark,
And long dishevelled hair."

The assertion that trees in or near a garden are apt to transfer their insect habitants to shrubs or plants beneath them, has some little weight, but I do not think it has much application to this tree, though the Birch has many insect enemies, some of which mar the appearance of the foliage, while others attack the wood. Not all the knots or excrescences which are to be seen upon the Birch are to be ascribed to the punctures of insects, however, and I believe that the twig-tufts (which have been compared to rooks' nests in miniature) occasionally disfiguring the branches, are not tenanted by insects, nor the results of their visits. Such was the opinion of Rennie, though a modern author with more knowledge of botany than Rennie possessed, seems to think these abnormal growths must be thus produced by some Cynips. As in other cases where the Cynipidæ are concerned, there is a difficulty in ascertaining the habits of the species which has been at work, or even of identifying it. On the trunk wens and excrescences also appear, not all of which are caused by insects. Some of these growths which have been produced through an extravasation of the sap, are out of all proportion to the insects that caused or inhabited them, and it is my opinion that some irritative action is set up by the insect's puncture through the ejection of an acrid fluid into the wound, as in the well-known instances of the wasp and bee. On the leaves we may now and then find galls which are produced by an insect of a different order to the gall flies proper, a dipterous insect of the genus *Cecidomyia*. Minute two-winged flies are developed from these, but I have not had an opportunity of fully investigating them.

Three species of saw-flies have been noticed which inhabit the leaves of the Birch, and in some seasons these are so numerous in the larval condition, that young trees from a short distance off assume a whitish appearance. This may occur in May, or in September and October. *Phyllotoma fuliginosa* and *P. mellita* form blotches upon the leaves, which are not unlike those which are the habitations of small moths of the genus *Micropteryx*. Of these saw-flies, *P. mellita* seems abundant near London, and its economy has been carefully described by Mr. Healey. The imago or flies are out in May and June, when, of course, the eggs are laid sometimes only one on a leaf, at other times several; as many as seven have been noticed, more than a leaf will afford sufficient food to, yet, according to observation, they seem not to have the power of migration from one leaf to another, but in such an event they emerge as imagos dwarfed in size. As we find with many other larvæ living in the interior of leaves or branches, these have a horny plate on the second and third segments, which serves as a shield; the head is brown, the body white, with a greenish tint down the back. They are well provided with legs, having no less than twenty-two; these are either banded or dotted with black. It is singular that being so well able to move from place to place, these larvæ should be determined to make one leaf their home. They only quit it to undergo the pupal change, when they bite a hole through the epidermis, and descend to the ground, dropping, and not crawling down as is believed. Having reached it they enter and conceal themselves there, spinning a silken cocoon.

Several things which are rather peculiar are noticeable in the history of these little fellows. Thus, within their mines they almost invariably lie upon their backs, and when young are not easily alarmed, but when about half grown they race up and down the mines if the leaf is handled, and when nearly adult, instead of moving along, they alternately bend and straighten their bodies if alarmed. Of the *frass* (a convenient German word which serves to veil what we would prefer not to name in Anglo-Saxon), Mr. Healey states that "it is found in little pellets, which are scattered about the mined portions of the leaf, though instances occur where these pellets of *frass* are connected together, reminding one of a string of liliputian sausages. At certain times short lengths of the cord of pellets break away from the main cord by their own weight, and after a time the larva, as though animated by a desire to keep its abode clean and tidy, is seen to go in search of the broken-off portions of *frass*, and by a few dexterous movements of its posterior segments to collect and arrange them into a circular-shaped heap."

Other saw-flies of larger proportions are found on the Birch occasionally, feeding externally in groups in their customary manner, such as *Cimbex femorata* and *Trichiosoma sylvaticum*. These may be got rid of or checked; not so the leaf-miners, which baffle our skill, as we scarcely observe them until the mischief is done. Nor is the Birch without its aphids and

coccus, the habits of which need not be gone into; the latter is to be looked after in the spring, when the carcase of the parent may be detected on the bark covering a party of youngsters, quite prepared to go foraging. A species of *Eriosoma* also occurs on the Birch, and I found this woolly aphid abundant in Kent during the past summer. There was a flight of them on a calm day, composed apparently of winged males only, the object of this migration not being obvious. Wingless individuals of this species, and of other aphides clothed with down, do occasionally pass, however, from one tree to another, borne along by the breeze. Migration in this way is uncommon, I think, and it is, therefore, still doubtful whether the Vine pest, *Phylloxera vastatrix*, ever travels thus, as has been recently stated.

Many species of beetles resort to the Birch, finding food there for themselves and their larvæ either in the leaves or the bark. *Chrysomela Betulæ* is a pretty species, but rather destructive where it is plentiful; more injury is done sometimes by the beetles than by the larvæ of this species, as they greedily devour the leaves and young shoots. Several species make the decaying trunk their speciality—as, for instance, *Rhagium inquisitor* and *Leptura quadristriata*. It may also be mentioned here that the caterpillar of the Large Red-belted Clearwing Moth burrows in Birch stumps, where it is eagerly sought by entomologists in the spring or early summer, the cause of much vexation to the soul of various gamekeepers in our woods in the south. One of these, unaware that he was addressing an entomologist, recounted to me with much pathos the constant annoyance he experienced from the wandering marauders of the “net and pin.” They disturbed his birds and cut his trees about, and as the wood he had to watch was extensive, and he was not an Argus, his work was heavy; worst of all, they used to bribe his subordinates to let them pass with impunity!

Amongst the Lepidopterous larvæ, indeed, a long list of Birch-feeders might be made out of those preying, not upon the wood, like the one just named, but upon the leaves. In the vicinity of London we find the caterpillars of the Buff-tip (*Pygæa Bucephala*) feeding on the Birch every year, some years numerous, though I fancy of all trees it prefers the Lime. Patches of the pearly black-dotted eggs are to be detected on the leaves in June or July, and the party of newly-hatched caterpillars (which may number from twenty to fifty) is conspicuous on the leaf, because they feed closely compacted together, and their shining black heads and yellow bodies, which are hairy, render them sufficiently visible, at least to the naturalist, even if birds are not thereby attracted; but, as a rule, they eschew hairy larvæ. At the end of the first moult these companies of Buff-tip caterpillars divide into smaller parties, evidently because they can then feed with greater facility. When not eating they repose with the anal claspers raised in the air in a rather ridiculous manner, and this habit they retain until quite adult. If a bough be shaken on which they are feeding they fall heavily to the ground, not rolling into a ring, and turn directly towards the spot whence they have been ejected. Should one be handled, or even slightly touched, it will make determined attempts to seize its enemy with its jaws—a circumstance I have not seen noted in print by those who have written about this species.

This caterpillar, according to a reverend naturalist of our day, bears upon its body markings which are symbolic of the mode in which the young individuals feed; but it is so far true that it has a series of interrupted black stripes arranged with regularity on the dark yellow ground, which are best seen in the nearly adult caterpillar. The legs and claspers are black and shining, as also the head, which bears a yellow streak resembling the letter V. Both head and body are well clothed with soft hairs. Mr. Newman observes very truly that these caterpillars will feed upon a variety of trees beside the two named; and concerning their habits when full grown he remarks, as many of our readers may have noticed, that they wander about, crossing roads and paved paths, in search of a resting place, where they become pupæ, only slightly concealed by a few clods of earth or fallen leaves. He adds, “They constitute then a favourite food of poultry, and are sought for with great eagerness. Dame Partlet may often be seen scratching for them in my own neighbourhood under the Lindens.” The moth is sluggish, with purplish grey fore wings and a large ochreous or buff patch at the tip, whence the English name. The hind wings are yellowish. The Latin name, signifying “bull-headed,” was suggested by a supposed resemblance between the moth with its wings closed and the head of a bull.

Many of the caterpillars which feed on the Birch leaves are rare and local—as, for instance, those of the Lobster Moth, the Large Emerald, the Kentish Glory, and others of singularity and beauty. That of the August Thorn (*Ennomos angularia*), is not uncommon upon Birches in parks and gardens; it is a stoutish caterpillar, one of the Geometers or Loopers, reddish brown in colour, and bearing four humps or protuberances on the back and sides. This feeds in the summer, and the moth, which is angulated like others of the Thorn family, emerges in August and September, and sits in the day on trunks of trees and palings; at night it is especially fond of frequenting gas lamps, in the radiance of which many specimens immolate themselves. The Peppered Moth (*Biston betularia*), which takes its name from this tree, has no special right to it, since the caterpillar is almost a general feeder. Near London it occurs mostly on Oak and Hazel. A small but common moth, which bears the name of the Brimstone from its predominant colour (*Runcia cratægata*), deposits eggs chiefly on the Whitethorn, but now and then on other trees. The species has sometimes been spoken of as one of the gardener's foes, but it can only be so in a very insignificant degree. It is possible that the caterpillars may wander from the Hawthorn hedges to the fruit trees they enclose. So, also, it may be discovered on such trees as the Birch and Willow, there being to appearance two broods every year—three, even, it is thought, in some places. The caterpillar of *R. cratægata* is of a dull purplish brown hue, and slightly humped. It is remarkable for having two pairs of claspers or forelegs, which are scarcely used in walking.—J. R. S. C.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Broccoli should now be laid down, of course with the heads facing the north; the mode of doing it is so well known that a lengthened description would be needless. Take up and store *Carrots*. A dry place underground, where the temperature is not much affected by external circumstances, is the best for this purpose. I once saw a house constructed for storing Carrots and Mangold Wurtzel, which answered the purpose well. The walls were formed of dried fern, which after being cut to a smooth face were a yard through; some rough pieces of wood were placed across the top at the required height, and the whole was thatched-in; the doorway faced the north, and the internal temperature seemed very equable. Dress Globe *Artichokes* with some rich manure. Continue to blanch *Endive*, and earth-up *Celery*. Look well to *Cauliflowers* and *Lettuces*. Pinch off decayed leaves, and dress with lime.

FRUIT GARDEN.

Continue to plant fruit trees of all descriptions. Now is by far the best time. Put in cuttings of choice Gooseberries and Currants, and make fresh plantations of Raspberries. The pruning of Pears, Plums, and Cherries may be commenced.

FLOWER GARDEN.

The laying-out of new grounds, or improvements in old ones, which may be in contemplation, should now be proceeded with when favourable weather occurs. It is too often the case that such operations are left till too late in the season, and are retarded by the frosts and snows of winter, thus interfering with the usual routine of labour during the busy months of spring, when our thoughts and energies should be all in requisition to meet those incessant cares and duties attendant upon the season of the year. Prepare beds for Roses as recommended; and where large collections in masses are contemplated, see that the ground is properly trenched, and plenty of rotten manure well incorporated with the soil as the work proceeds. Depend upon it, in the cultivation of the Rose there is nothing like laying a good foundation to secure an abundant and continuous supply of bloom. Continue to clear off all decayed matter from the flower-beds, and prosecute the planting of Tulips, Hyacinths, Anemones, Ranunculuses, &c. Spring-flowering plants—such as Primulas, Polyanthus, Iberises, Arabis, and Alyssums of sorts may be brought from the reserve garden and planted in masses in the beds, thus imparting a cheerful appearance during the winter months and producing a gay effect in the spring. Continuous and heavy rain during the week has prevented much work being done in the flower garden. Especial care must be taken of the Auricula frame to prevent drip. If the glazing is not perfect it must be made so. The plants should be exposed to a south-eastern aspect and have very little water—once a week will be ample. Every precaution must be taken against damp, a free circulation of air at this season being absolutely indispensable. Tulip-beds must be made-up the first opportunity, and, as soon as the soil is dry, plant. It is absurd to keep to one particular day, for the weather may be fine from a month previously to the day of intended

planting, and at this uncertain period wet may set in and the soil be wholly unfit for a long time, to the great injury of the bulbs. Never plant with a dibble when the soil is moist; I do not like the system at the best of times, but when the soil is wet it is absolute destruction to them. The last day of this month is the latest period at which I would advise anyone to procure Carnations and Picotees. They do not get established well before winter, and when that is the case the foliage withers, and is more susceptible of mildew, spot, &c., than when the roots are performing their proper functions. The late heavy rains are very unfavourable to recently-potted layers, and by all means every protection should be given. The lights from Cucumber-frames afford excellent shelter. It is advisable that they should have all the air possible for some time to come. There is no greater error committed in the cultivation of these flowers than stewing them up in frames too early. Attend to routine operations. The lawn should be frequently swept, and another mowing will be requisite, which will bring this laborious operation to a close for the season.

GREENHOUSE AND CONSERVATORY.

The period has now arrived in which the increased scarcity of flowers in the decaying parterre should be compensated for by those conservatory flowers peculiar to winter, and by retarding summer things. These together, under good management, will lead imperceptibly up to the products of the forcing pit, which form a distinct section, and, of course, require a separate course of treatment. The Camellias will form a most prominent object in this structure for the next six months, and those which have been managed according to previous directions will be in full gaiety until Christmas. Such should now have weak and clear liquid manure, and a temperature of 50° to 55° secured, descending at night to 45° in dark weather. A very considerable amount of atmospheric moisture should be afforded them; drip, however, must by all means be avoided, and the syringe is out of all question. The Chrysanthemums may be treated with manure water constantly, and all suckers and waste shoots trimmed away. Early Cinerarias should now be coming into bloom, and above all the tribes for winter flowering these require all the light which the season affords. They should be kept close to the front glass until in bloom, be frequently syringed in a light way, and if the shelf is warmed by means of a flue or pipe beneath, so much the better. The Chinese Primroses will do in a more shady situation. Strong plants sowed last March will bloom now under any ordinary circumstances; they do not endure dry heat. The hybrid Roses, as before observed, will enjoy a similar treatment to the Chrysanthemums, whilst the Tea Roses will class better with plants of intermediate character, requiring a little more warmth with a permanence of atmospheric moisture. Such are the Euphorbia jacquiniiflora, Gesnera zebrina, Achimenes picta, Gesnera oblongata, Linum trigynum, Plumbago rosea, Begonias, &c., all of which should have a temperature of 60° secured by day, rising to 80° in sunshine, and sinking to 50° at night. One of the chief evils we have to contend against at this season of the year is humidity. While we are anxious to afford our plants the advantages of a continuous supply of fresh air by the ordinary contrivances of our plant structures, the admission of the grand essential is the introduction of the crude unwholesome fogs so fatal to many exotics. The remedy lies in an improved system of ventilation, by which the air could be rarified prior to its entrance into the conservatory. A series of small orifices below the hot-water pipes, and ventilators at the back of the house, is a ready method, would secure a constant supply of fresh air, and cause a desirable activity in its circulation. Restrict water to all plants which have perfected their growth; withhold it entirely from bulbous plants from which nothing further is required this season.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

We placed a little litter ready to protect forward Cauliflowers if a frost should suddenly occur. The cleanest protection under such circumstances will be two or three of the best leaves folded over the heart, or the flower, and if the frost be too much for that, put a handful of clean litter or old hay over each head. We kept Veitch's a month over the New Year last season with, in addition to the above, banking up the stems with litter. If we could do so with the bulk of our Broccoli plantation we should not trouble to lay the plants down. The chief objects in laying these down are—first to check luxuriance, and secondly, to protect the heads from attacks of frost. Laying-down has a little influence in lessening the size of the flower-heads. The banking-up with litter, and protecting the crowns as stated above, are equally a safeguard against frost, and there is no such check as would prevent the production of large swelled heads; and though not so suitable for gentility, a huge firm head of Broccoli is generally sufficiently prized by all with whom bulk of good matter is ever a prominent consideration.

We laid some litter ready to cover fine rows and beds of

Radishes if a sudden frost should come. We also sowed Radishes in a frame with but little heat beneath, as heat, however valuable at times, is apt now to make Radishes leg too much. Planted out more Lettuces on ridges and south banks, and took up a lot of plants, and also of Endive, placing them thickly, so that we can cover them with old sashes or other protection. Our great drawbacks in this respect, and but for them we could calculate on a constant supply to a nicety, are rats and grass mice, which attack the hearts of the plants as soon as they are shut up and covered from the frost.

FRUIT GARDEN.

As the weather was so wet we began to get our Strawberry plants in pots placed under protection, to prevent their being soaked. The evil in our case is, that if covered up, we are so liable to have the crowns nipped out, and little of that is done when they are freely exposed in the open air. Keeping pots for a time moderately dry is a fine preparation for forcing.

ORNAMENTAL DEPARTMENT.

We have lately said much about lawns, walks, &c. *Chrysanthemums* we have mostly tied and got under cover. For two months, along with Salvias, &c., they make a fine display, and yield plenty of blooms for cutting and filling shallow dishes and epergnes. Already we find them very useful. For this purpose we do not trouble ourselves with thinning the flowers much, but thin them out when they are fully expanded, leaving the buds to swell in succession. When splendid blooms are required, and fewer of them, then we thin the buds freely, though by doing so we cannot cut half or quarter the number of fine flowers. We like to have plenty of young plants raised from cuttings or suckers every year, but when the object is to obtain huge sheaves of bloom without so much regard to fine foliage over the rims of the pots, for that purpose no plan is simpler or better than dividing and repotting the old stools in spring. No young plants will yield with so little trouble such a mass of blooms to cut from. After the buds begin to show, the pots will take the manure water freely, and if that is not convenient, a little soot, superphosphate of lime, a slight pinch of guano, or a rich top-dressing of sweet dung, will greatly add to the size of the blooms, and keep the leaves green. It is an advantage when such helps can be given in rotation, say a week of each kind, for plants, like animals, enjoy a change of diet.

In warm places *Chrysanthemums* do well in beds out of doors, and it is best to plunge their pots; and altogether, against fences of all aspects they bloom profusely, and make a place gay when everything else begins to feel the effects of the approaching winter. Plants turned out in spring and lifted carefully do not feel the moving much either for transplanting or repotting, as they make such a number of fibrous roots. For small dwarf plants we have used two modes with success. First, take off the shoots 6 inches long when well studded with flower-buds, and strike them in small pots with a little bottom heat, but keeping the top temperature cool with air; and secondly, layering the tops of shoots in small pots and cutting them off when rooted. The latter involves least care, but we have often had the neatest and best plants by taking off cuttings at once. We have thus had nice heads of bloom in 4-inch pots, and on plants some 9 inches in height taken from plants that were from 3 to 5 feet high. Beds of a dwarf character can easily be formed by layering and pegging the strong shoots; but for in-door work it is better to have plants of several varieties, in height from so many inches to as many feet.

Salvia splendens, and even *fulgens*, come in well to vary the colour of *Chrysanthemums*, and so do yellow and especially crimson branching Cockscombs, also all the varieties of scarlet and variegated *Pelargoniums*. All these are useful where much cutting is required, as the leaves, when ornamental, accord well with Ferns for outside borderings to the flowers.

The rains have made sad havoc with the blooms of *Geraniums* out of doors. Many of the *Calceolarias* still stand well, and *Ageratums* and *Salvias* are yet fine; but as the leaves of deciduous trees are now falling freely we may consider that the glory of the pleasure grounds is past for this season, though a fortnight of fine weather would yet bring out rich bloom.

Much of the work has been devoted to finding room for florists' and fancy *Pelargoniums*, and cleaning and washing the places where they were to be placed. We have cut down late-flowering kinds of the same, and put all together—scarlet, variegated, and fancy and florists' *Pelargoniums* that will bloom in winter and spring, getting them into vineries, &c., where they will remain in a temperate atmosphere until we want a higher temperature for the Vines. This sort of shifting and cramming, but no longer than the plants will stand it, is of vast importance in all places where much must be done in little room.

Fearing damp even more than frost, we have had a good portion of our cuttings for the flower garden next season, just so late as to be beginning to root, placed in vineries and Peach houses; and as they are mostly in portable wooden boxes, the most of the care they will require for some time will be a skiff from the syringe in sunny days to prevent too free evaporation, and a trifle of fire heat to keep out frost.

For the same reason we have taken a good portion of our largest Primulas from frames and placed them on shelves in these houses, and we have done the same with forward Cinerarias, only giving them saucers to stand in, and as soon as may be we shall place a little moss in the bottom of each saucer. With a moist bottom we seldom need to waste tobacco on Cinerarias. We took up some of the best Geraniums from beds, and treated them as often described.—R. F.

TO CORRESPONDENTS.

* * We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

PLANS OF MAZES (*J. G. & Co.*).—There is a plan in No. 577 of this Journal, with a slight correction in No. 578. There are no modern works containing plans of mazes. Switzer's "Iconographia," and Mascall's "Countryman's Recreation" contain several. They were published two centuries since.

PAINTING BOARDED FENCE (*P. of Kent*).—No colour is better than stone colour for the side against which the fruit trees are to be trained.

SOWING GLORIOSA SUPERBA (*E. A. B.*).—You are probably aware that it is a stove plant, and we do not think it will succeed in a greenhouse where the temperature never falls below 45°, though it would survive that if a brisk heat were kept up during the growing season. If you can give that we think you will succeed. Sow the seed early next March in a compost of equal parts peat, loam, leaf soil, old cow dung or well-rotted manure, and sand, covering the seeds about a quarter of an inch deep, and place the pots in a hotbed of not less than 75°, nor more than 90°. Keep moist, but not very wet, and when the seedlings are up let them have abundance of light; keep the young plants near the glass, but still in bottom heat. They must be kept moist at the roots, and have a moist atmosphere, a temperature of 65° to 70° at night, 75° to 85° by day, or 90° with sun and air. When the seedlings can well be handled pot them off singly in 3-inch pots, and return them to the hotbed, shading for a few days until they have recovered from the potting, then admit air, and expose to light. When the pots are filled with roots shift the plants into 5-inch pots, which will be sufficiently large the first season, keeping them in the hottest structure you can command, with a moist atmosphere, up to September, when the moisture should be diminished, and the plants dried off before winter, and kept dry until March. Then shake away all the soil and repot, covering the bulb about an inch or so with soil. Place the plants in a hotbed, and do not give any water until the bud appears above the soil. Encourage growth with strong heat and moisture, training as it proceeds. The plant will succeed in the greenhouse after it has advanced to the flowering state. When the leaves are turning yellow cease watering, and when the flowers are completely decayed place the pots where they will be dry until the following March.

SEEDLINGS (*N.*).—The Pompon white Chrysanthemum is good, and if of dwarf habit an acquisition. The Pansy is not so good as many others of the same colour. (*T. Cooper*).—We can give no opinion, as we have only a leaf and a flower. Send a plant to the Floral Committee of the Royal Horticultural Society. The plant is *Hedychium Gardnerianum*.

WARTS ON PEA-ROOTS (*J. T. S.*).—They often occur in sandy soils, and seem as if they were a natural effort to obtain a store for moisture.

SELECT ROSES (*J. M., Bingley*).—Charles Lefebvre, Senateur Vaisse, John Hopper, Pierre Notting, Gloire de Dijon, Victor Verdier, Madame Alfred de Rougemont, Jules Margottin, Beauty of Waltham, Princess Christian, Prince Camille de Rohan, Marie Baumann, Comtesse de Chabrillant, Baroness Rothschild, Elizabeth Vigeron. For the wall, Maréchal Niel.

SCALE ON PEACH TREES (No. 789).—Clarke's Compound, 1 oz. to the gallon of water, applied with a brush at a temperature of 120°, or it may be syringed on. Soft soap 4 ozs., tobacco water a gallon, sulphur vivum enough to make a thin paste or paint, adding a wineglassful of spirits of turpentine, well mixed, and applied at a temperature of 120° with a brush, taking care not to dislocate the buds.

OLEANDER LOSING ITS LEAVES (*G. S. R.*).—We do not know what you can do at this time of the year to induce the plants to throw out more leaves, except placing them in heat, which will of course cause them to grow, but it would injure them. Keep them dry during the winter, giving no more water than sufficient to preserve their freshness, and encourage growth next April and May by placing them in any house with a good brisk heat and a moist atmosphere. They succeed well in a compost of two parts fibrous loam, one part leaf soil, half a part of old cow dung, and one-sixth of sharp sand. If the plants are young add one part of sandy peat, the whole well mixed. Provide good drainage.

VINE LEAF COLOURED (*M.*).—The leaf you sent is not infested with any insect, but is simply assuming the appearance consequent on its approaching fall. The cause of the leaves being of the colour of that enclosed to us on the ripe wood, whilst those newly formed are green, is the wood from which the latter proceed being unripe. Keep both the roots and atmosphere dry.

REMOVING VINE LEAVES (*X. of Sidmouth*).—The leaves should not be removed until they part freely from the vine, which they will do when they become yellow; but it is well to leave them on until they fall of their own accord. The vine shoots should not be shortened beyond the point where they were first stopped, and all laterals may be cut off at their origin. The

pruning should be deferred until the leaves are all off. The name of the plant is *Chorozema varium*.

VINES FOR A GREENHOUSE VINERY (*H. T.*).—In such a house, 30 feet long, we think six vines would be sufficient, as that would enable you to have a fair amount of light in summer. The vines we would prefer would be, at the warmest end, White Frontignan, one Royal Muscadine, white; one Buckland Sweetwater, white; two Black Hamburgs, and one Muscat Hamburg. If you had no desire for Muscat flavour, we would say three Royal Muscadines and three Black Hamburgs planted alternately. We would make the vine border on the south-east side instead of the north-west side: 105 feet of 4-inch pipe will keep such a house safe from frost.

VINE PRUNING (*J.*).—The answer to which you refer was made on the data there given—to obtain as much fruit as possible the next year. For free fruiting in future years the matter would be quite different. If continuous free-bearing were an object, we should cut back these rods fully two-thirds of their length, instead of only removing 18 inches from the points.

GRAPES SHRIVELLED (*B. S.*).—Your Grapes are not well ripened; they should have been ripe by the first week in September, and as this has been an unfavourable season, sufficient artificial heat should have been applied to make up for the want of sunshine. A damp stagnant atmosphere is the cause of the Grapes becoming mouldy; cut the decaying berries out as soon as they are perceived. If you have plants in the house be careful not to spill water about, and dry up any damp by warming the heating apparatus by day when the ventilators are open.

WATERING VINES (*H. H.*).—At this season not a drop of water should be sprinkled about anywhere in a vinery where fruit is hanging. As all the roots of your vines are inside, you should give the border a thorough good watering about the middle of February.

FIG TREES CASTING THEIR FRUIT (*Ficus*).—Read an article in the *JOURNAL OF HORTICULTURE*, vol. xvii., page 93, New Series. Fig trees are very apt to cast their fruit, and some varieties more so than others. White Marseilles and Brown Turkey are the best to grow. Your greenhouse may not be warm enough for them. The fig will fruit freely in a house not artificially heated, but shut up early in the afternoon to obtain all the advantages of sun heat. The fig will not succeed on a north wall; it requires much light, and the leaves must be freely exposed to the sun to ripen the fruit well.

PLANTING-OUT TACSONIA VAN-VOUXEM (*T. C. M.*).—As you purpose planting in an outside border we advise you not to plant till spring, as there will then be less danger of the part outside being injured by cold, and it will have a better chance of becoming hardened before the next winter. At that season it will be necessary to wrap the exposed stem in a hay-band or other protecting material.

CAMELLIA UNHEALTHY (*Idem*).—As the potting and drainage is good, and the roots in a healthy state, we are quite at a loss to account for the falling of the leaves; those which drop off may, however, be only the old leaves which naturally fall. We do not see how the leaves could fall unless they had been washed with some solution for the destruction of insects, which may have been too powerful.

AURICULA CULTURE (*Jack*).—The Editors know of but one volume devoted to the Auricula, it is entitled "A Plain and Practical Treatise on the Culture of the Auricula. By Isaac Emerton." It was published in 1816, and can only be obtained second-hand.

WINTERING CANNAS (—).—Take up the roots after the first frost and lay them in a shed for a few days to dry, the tops should be removed and the roots freed from soil; then place them in dry sand in a cellar or any place secure from frost. In March they should be potted, dividing them if you need increase, and placing them in a hotbed, but do not water until they are growing, then water freely. A good growth being made, harden-off well before planting out.

PACKING PLANTS FOR EXPORTATION (*J. F. D.*).—The only safe mode of packing the plants you name is in a Warden case, or a packing-box with a glass top, removable so that the plants can be attended to. The pots should be plunged to the rim in moist but not very wet moss or cocoa-nut fibre refuse, covering the soil in the pot with moss and tying down separately. The pots should be made secure by laths fitting inside the box, and nailed so as to keep them from moving in any way. They can hardly be made too secure in that respect. The glass should be put in a frame, and should be thick. In the box apertures should be made (say 2 inches beneath the glass top), an inch across, and 2 inches apart all round, and perforated zinc nailed over them. The Gooseberry and Currant bushes travel best with the roots packed in straw barely moist, and then covered, tops and all, with clean dry straw, to the thickness of fully 6 inches; then place them in a wicker basket secured tightly with dry straw; or they may be covered with mats over the straw, and secured with string. They should be moved when at rest.

PEACHES FOR WALL—CUTTING DOWN CINERARIA MARITIMA—PAINTING HOT-WATER PIPES (*G. S.*).—The best early Peach for a wall is probably Rivers's Early York, but its parent Early York is good. A good late kind is Raynackers, but a later kind is Princess of Wales. All are good. From the edging of *Cineraria maritima* we should only remove the irregular growths so as to give a trim appearance, deferring the general cutting-in until the plants commence making fresh growths in spring. The best thing for painting hot-water pipes is lamp black brought to the consistency of thin paint with linseed oil, and applied to the pipes when they are as hot as it is possible to make them. This will dry them, and the paint will be put on better; besides, you will have all the smell at once; once dry it will not again give off fumes. Admit all the air possible whilst the pipes are being painted, and brush the paint well in, and so that it does not run.

PLANTS FOR RIBBON BORDER (*M. A. B.*).—We do not know of any herbaceous plant that will flower for nearly four months consecutively, and keep up a good appearance along with bedding plants. In your border of four rows, with *Cerastium* for one, as an edging next the grass, we do not know what you could have better in the next row than *Saponaria calabrica*, sowing it early in April; then *Dell's Crimson Beet*, with *Tom Thunk Yellow Tropaeolum* at the back. You will have rows of white, pink, bronze crimson, and yellow; the last three plants raised from seed annually. Sweet William is not continuous-blooming enough for your purpose. In your other border we do not know what better arrangement you can have than the *Lemon Thyme* for the edging. You have *Dell's Crimson Beet* next, and *Cineraria maritima* at the back, which, raised in heat from seed sown in March, will be sufficiently strong for planting-out in May. It is quite hardy, remaining over the winter, and being better in colour the second year than the first.

OAKS FOR PLANTING (*Tarmouth*).—We consider 3 to 3½ feet a proper size. Larger do not succeed so well with us, but the main point is to have only

those which have been properly transplanted. Those which have not been frequently transplanted are not worth planting.

GUERNSEY LILIES AFTER FLOWERING (C. R.).—Keep them on a shelf in the greenhouse, and well supplied with water until the leaves turn yellow, about next May or June, and after that do not water at the surface of the pots until they begin to grow again in autumn, but keep the pots on saucers filled with sand which should not be allowed to become dry in summer, or at any time. The bulbs may flower next autumn, but it is rarely they do so, for being taken up so near the time of their blooming, they are so much weakened that they rarely flower the second year.

TUBEROSES NOT FLOWERING (Idem).—Continue the tubers in the pots, lessening the supply of water, and keep them dry after December. In March repot them, removing all the old soil that comes away freely from the roots, also the offsets; pot singly in 6-inch pots, just covering the tubers to the neck. Use two parts light turfy loam, and one part leaf soil or very rotten manure. Place the pots in a hotbed of 70° to 75°, and continue them there until a good root-growth has been made; when the tops have advanced to about 6 inches or so gradually withdraw the pots from the hotbed, and place them in a warm part of the greenhouse, or light airy part of a vinery. Keep the plants well watered, and frequently syringed so as to prevent red spider.

HEATING PEACH HOUSE (Idem).—We do not know the terra cotta stoves to which you allude, and do not think you could do better than heat by hot water. Two 4-inch pipes (a flow and return), along the front and one end will be sufficient, and we should advise you to take another estimate; the one you have received appears very much too high, probably owing to the kind of boiler employed. Write to those advertising in our columns, stating what you require, and sending a plan of the house.

FORCING LILY OF THE VALLEY (T. E.).—The best way is to take up the roots carefully, those with plump round crowns, and place them in pans or boxes, filling-in the interstices with rich turfy loam made fine. Place them on a bed of leaves or dung with a bottom heat of 65°, let them remain there a fortnight or three weeks, then put on the lights of the frame, keep covered with mats until the flower-stems are an inch above the soil with their lower flower-buds, then expose them fully to light, and the leaves will soon become green, and the flowers expand. The temperature of the frame should range from 55° to 65°. After the turn of the year bottom heat is not essential. We place our roots on the wooden stage that rests with the laths on the pipes, so that the plants in the pans and boxes receive some warmth. The temperature is 55° to 60°, 70° or more by day with sun heat and plenty of air. When the first flowers open they are placed in a house with a temperature of 45° to 50°. We force about a dozen pans or boxes of this lovely flower fortnightly, from November to April. Meyen's "Outlines of the Geography of Plants," published by the Ray Society, and Masters's "Vegetable Teratology."

VARIOUS (An Amateur).—Your plants in a room will be injured by the "through" draught; strive to avoid it. The window will afford you all the ventilation you require. The main point is to give a change of atmosphere, and to give no more water than is absolutely necessary to keep them fresh. Madame Treve Pear, like many other kinds, is very late and considerably below the usual size this season. We think you have the right sort. Pears ought not to be kept in a higher temperature than 45° to 50° when ripening. None of the Abutments that we have seen is so good as A. Thompsoni, but we have no doubt they are useful for greenhouse decoration. The Beet for spring decoration we should allow to remain where it is until required, and then move it with all the soil practicable, watering at planting. Cover the ground about the roots with sifted coal ashes to the depth of one-half to three-quarters of an inch. We presume the soil is light and well drained.

VARIEGATED ELDER (W. H.).—Both the silver and golden variegated are common. Yours is the Silver, *Sambucus nigra argentea*.

SPRING-FLOWERING SHRUBS (E. F. D.).—You do not say what you intend, therefore we name some of the best evergreen and deciduous kinds. *Evergreen*: Berberis Darwinii, B. japonica, B. Aquifolium, Cistus algarvensis, C. angustifolius, C. purpureus, C. ladaniferus, Helianthemum, Ligustrum ovalifolium, Spartium junceum, S. multiflorum, S. scoparium, Ulex europæa flore-pleno, U. stricta, Viburnum Tinus, Vinca major, V. minor, Rhododendrons Andromeda floribunda, Erica mediterranea, hibernica, E. herbacea, carnea, Kalmia angustifolia, K. latifolia, Ledum angustifolium, L. latifolium, and Pernettya mucronata. *Deciduous* shrubs are Amelanchier latifolia floribunda, Amygdalus nana, A. persica flore-pleno and vars., double carnation, crimson, rose, and white; Cerasus prostrata, Cornus mascula variegata, Crataegus Oxyacantha, vars. coccinea plena, multiplex, punicea flore-pleno, rosea; Cydonia japonica, C. japonica alba, Cyttus alpinus, Daphne Mezereum, D. Mezereum flore-albo, Dentzia crenata flore-pleno, D. gracilis, D. scabra; Forsythia suspensa, Genista tinctoria flore-pleno, Kerria japonica flore-pleno, Peonies, Philadelphus coronarius and var. flore-pleno, P. latus, P. grandiflorus, Prunus triloba, Ribes aureum, R. sanguineum, A. speciosum; Sambucus racemosa, Syringa Emoldi, S. persica and var. alba, S. vulgaris and vars. alba, Charles X., Dr. Lindley, and grandiflora; Viburnum dentatum, V. Lantana, V. plicatum, V. Opulus nanum; Weigela rosea, W. amabilis, W. amabilis alba, and Azaleas.

PRUNING GOOSEBERRIES (Idem).—In pruning your Gooseberry bushes you will need to leave young shoots for forming the bush, so that when grown a foot they will be 1 foot apart; they should only have the points of the shoots removed, or say one-third of their length. When the bushes are formed you will not need to leave any young shoots, except it be to replace a worn-out branch, which should be cut clean out or shortened to the young shoot, training that in its place. All the young shoots along the branches should be cut-in to within half or three-quarters of an inch of their base, but the shoot at the end of the branches should be cut back to 2 or 3 inches, or left longer, according as increased size of the bushes is wanted. Rivers's "Rose Amateur's Guide" will suit you.

WOOD ASHES (Monitor).—They may be applied as a top-dressing throughout the garden, and to flower and vegetable crops alike. They are valuable for heavy soils. We should apply them now, or after the ground is dug, and they may be put on an inch thick, and pointed-in in spring with a fork. They are beneficial to Onions, Carrots, and, indeed, most crops. We do not advise them to be used for plants, or only to the same extent as sand, or one-sixth of the compost. To the Vine border they may be applied as a top-dressing in March. The border may be covered an inch thick throughout.

DESTROYING SLUGS (C. L.).—We approve of your plan of proceeding with quicklime, but you must not expect to exterminate them by a single application. Clear away as much of the decaying parts of the plants as you can, and towards evening on a mild day, and after rain, give the whole of the ground a good dressing of quicklime. It will not injure the foliage of the

most tender plants, but we would not place more of it over them than can be helped, yet covering the ground about them, and dusting it on the stems and crowns. The lime will only kill the slugs it touches, therefore you must apply more at intervals of three or four days. This persisted in during the mild weather we have now, and again in spring and early summer, will reduce them considerably. A dressing of 1 lb. of nitrate of soda to 30 square yards given in March or April will destroy many of them, and is beneficial to plants.

EVERGREENS FOR BORDER PLANTING (Conifer).—Your border will hold twenty plants in each row at 8 feet apart. For the back row (next the hedge) Abies orientalis, Ilex Hodgkinsii, Pinus austriaca, Taxus pyramidalis, Cedrus atlantica, Thuja orientalis stricta, Pinus Laricio, Ilex aquifolia flava, Picea nobilis, Retinospora pisifera, Pinus Lambertiana, Juniperus hibernica, Wellingtonia gigantea, Taxus elegantissima, Abies Douglasii, Cupressus Lawsoniana stricta, Pinus excelsa, Thujopsis borealis, Thuja Lobbi, and Taxus adpressa stricta. Next row:—Abies Clanbrasiliana, Taxus adpressa, Gold-leaved Holly, Thuja compacta, Osmanthus ilicifolius argenteus variegatus, Cupressus Lawsoniana variegata, Phillyrea ilicifolia, Thuja orientalis elegantissima, Picea grandis, Silver-edged Holly, Picea Nordmanniana, Pinus sylvestris pumila, Picea Pinnapo, Pinus Cembra, Picea lasiocarpa, Cryptomeria japonica nana, Cupressus Lawsoniana, Ilex altacandens, Cedrus Deodara, Desfontainia spinosa, Juniperus chinensis. The deciduous trees in the hedgerow ought to be removed, and we should not plant any less than 8 feet apart as a permanency; but we should certainly fill-in with common Laurel, Berberis Darwinii, B. Aquifolium, and other low-growing cheap shrubs. It is easy to move them, and they would give a finish to the border.

GENERALS NOT FLOWERING (G. T. B.).—In the specimens you enclosed to us, the growing, and, of course, the flowering parts are destroyed, and they will not flower. It is occasioned by the plants being kept too close and wet. They require a good brisk heat, an abundance of moisture, but not over the foliage, and the atmosphere to be well ventilated without creating a drying current of air. Slight shade from bright sun is necessary, but do not give too heavy waterings at the root—in fact, none until they become dry, then give a good supply before the foliage becomes limp. We ought to say that the leaf bore evidence of mildew, but we think that is a consequence of their being scorched or destroyed by excessive moisture.

ORCHID HOUSE (A Gardener).—We should not have an open stage only 6 inches above the hot-water pipes. The Orchids would suffer if you required a high temperature.

REMOVING WOOD OF VINE OUTSIDE A STOVE HOUSE (M. I. K.).—You ought to prune your Vine, and move it outside at once. Do not give it any water at the roots during winter.

TRANSPLANTING WELLINGTONIA GIGANTEA (J. W.).—When of large size it is probably the most uncertain of all the Conifers to move. Last year, however, we removed three trees from 12 to 15 feet high, and they have all succeeded beyond our expectations. We took out a trench all round, about 3 feet from the stem, cut off all roots, and then worked below the roots towards the stem, removing all the loose soil, and secured with mats the soil adhering firmly to the roots. We then lifted all out and carried away the trees on planks. With care we were enabled to plant with a good ball. Some good rich soil was put about the roots, and the plants were placed rather high, about a foot above the surrounding ground level, and a good watering was given after planting. They were made secure against winds. From the present time to the end of November is suitable for transplanting, and from March to the middle of April is equally good.

PRUNING THE FILBERT (Octogenarian).—In Kent, where large quantities of Filberts and Cobs are grown, it has long been the practice to prune the trees with what may be called great severity—i.e., leaving very little young wood; and as a vigorous tree will grow in some form, often making shoots 6 feet long, it has been the custom with many growers of late years to remove in summer—say August—all the strong rank-growing shoots, by pulling them out from the centre of the tree where they are mostly produced. With regard to the male catkins which appear in the autumn, there is much difference of opinion. Some affirm that they are always in sufficient number to insure fruitfulness in the female flowers if the weather and other circumstances be favourable at the time the latter are out, and they prune when most convenient. Others, again, affirm that it is better to delay that work until after Christmas, in order to give the male catkin a chance of assisting. All parties, however, agree that the little rose-purple blossom which constitutes the female organ is very tender and easily damaged, and all cultivators try to finish the pruning ere it make its appearance, as any rubbing against the "brush," as the tiny pink blossom is called, is fatal to bearing. In your case we would at once cut away all that is in the way of the path you speak of, and leave the rest till after Christmas. We are sorry an answer to your communication has been delayed so long from unavoidable causes.

SIZE OF BOILER (Devon Subscriber).—To cut close, a saddle-back cast-iron boiler, 24 inches long, 22 inches wide, and 20 inches high, would suit you; but we do not think anything is lost by having extra surface in the boiler; and were we in your case we would take the next size, though it cost a pound more—say about 30 inches long, 24 inches wide, and 22 inches high. As to the other matter, the circulation in two houses, we do not see our way so clearly to advise you. A plan of the elevations would have made all clear. As often intimated, the best way to heat two houses independently of each other is to have the boiler in the centre, with T flow and return pipes and valves on each flow. In your case the new house is to be 3 feet above the level of the old house, and we presume the old house is next the boiler. If so, we would heat the old house as now, with a flow and return entirely to itself. But as you must have a new boiler, we would have a second flow from its top, if that flow were only a 1-inch pipe; take that through the first house, which would not greatly increase its heat, and join it to the 4-inch pipes in the new house. A stopcock placed a yard or so from the boiler would shut off all heat except when you wanted it. A similar pipe should connect the return 4-inch pipe with the return-pipe in the lower-level house. We know that there is a prejudice against such small pipes, but we say Try it. We just now heat a considerable quantity of 4-inch pipes in a separate house some 70 feet from the boiler, and it is amazing how soon the 1-inch pipe that goes all that length heats the 4-inch pipes in the house.

CONSERVATORY ROOF LEAKY—FORCED SEA-KALE (X. Y. Z.).—As the rain comes through the laps of the glass we should have them puttied-up when quite dry with equal parts of ordinary putty and white lead. The canvas would answer a similar purpose, but not so effectually; besides, it would obstruct the sun's rays, particularly at a time when there is a diminished light. If you decide on the material, we consider tiffany No. 3 sufficiently thick and suitable for your purpose, but we do not advise it or any kind whatever. The

Sea-kale roots after forcing should be stored in moist but not very wet sand in a place safe from frost, and be planted in the open ground the first mild weather in February, or early in March; or you may plant out the roots after forcing, covering the crowns with litter so as to protect them from frost. Besides Potatoes in the unheated part of the house, you can have Cauliflowers taken up with small close heads; Broccoli that will head sooner than that in the open ground, and be safe from frost; also Peas and Radishes, with Lettuce, Endive, &c., for salads. Asparagus would also do well covered-up with leaves. For the plants to do well we should not have the Vines nearer than they are; but if you act solely for profit, plants being secondary, then we should put in another Vine between each, and so make the distance 4 feet.

NAMES OF FRUITS (A. D.).—It is not the Golden Hamburgh, but we cannot tell its name from a fragment of a bunch, there are so many of the same kind.

NAMES OF PLANTS (B. G., South Devon).—Not a Gaillardia, it is *Chrysanthemum segetum*, Corn Marigold. A portrait of it is in our "British Wild Flowers," (T. Tomlinson).—*Veronica Andersonii*. (W. B. Hanley).—A species of *Dioscorea*. (*Quercus Montana*).—2, *Begonia cinnabarina*, Hook. Bot. Mag., t. 4483; 4, B. sp. near B. monoptera, Hook. 6, *Spigelia pedunculata*. The remainder were leaves or florists' varieties. (*Chester*).—*Gongora atropurpurea*, Hook. Bot. Mag., t. 3220. (*Coburny*).—*Athyrium Filix-femina*. (*Leatherhead*).—Name illegible. 1, *Polystichum Lonchitis*, *Asplenium viviparum*, the finely divided frond; A. trapeziforme. The *Begonia* we cannot name from a mere leaf. (*J. Woodliffe*).—*Adhatoda Vasica*, Nees; *Justicia Adhatoda*, b, Bot. Mag., t. 861.

POULTRY, BEE, AND PIGEON CHRONICLE.

MISERIES OF POULTRY LIFE.

Of all seasons of the year this particular portion seems to be the most unhappy, alike for the poultry-keeper and the poultry. A general gloom pervades both man and birds; and oh! what a falling-off is there! Chickens that have failed to reach the desired perfection fall—if their owner be wise—into the pot and the pie; eggs fall off; a whole train of luxuries, for the principal ingredients of which we are indebted to our feathered friends, wonderfully diminish. Feathers fall off, the personal appearance of our said friends being, to say the least, very unsatisfactory. Veteran "heroes" of a hundred (show) fights, who are getting into the "yellow leaf" stage, fall off, or rather "shuffle off" and are no more seen about this time. Some having made for themselves a reputation and a name are spoken of with admiration and respect, and their portraits cherished in the drawing-room scrap-book—in *memorian*. The cock falls off in his gallantry, and appropriates for his own nourishment all the discovered dainties that in times past he would have laid before his hens for their gracious acceptance, with a disinterested manner most refreshing to behold. Poor fellow! he hasn't a very pleasant time of it just now; most of his gay plumage is to be found on the floor of the roosting house, or being blown about the yard; and, though I am no advocate for fashionable extremes, yet we must all admit that an elegant exterior carries with it a wonderful influence; and I can readily imagine the sultan of the poultry run wincing under the contemptuous glances of the ladies of his harem, and shedding a tear of regret as he parts with the last feather of his once magnificent tail, sighs forth, *Sic transit gloria mundi*. Then jealousy, that dreadful monster, plagues him sadly; the junior members of his large family become unpleasantly precocious, and aspire to dignities and privileges he himself has enjoyed hitherto uninterruptedly. Fancy that poor fellow's feelings when a cockerel (his own son too) persisted in crowing under his very "bill." The juvenile offender has a nasty place on his head—the result of his youthful indiscretion.

Moral.—Never dispute your father's authority till you've got a head as hard and as thick as his.—I. K. L.

CUPS FOR MAJORITY OF POINTS.

I CANNOT but think that many exhibitors will feel surprised at Mr. J. Ford's letter on this subject. I, for one, unhesitatingly say, that if exhibiting borrowed birds is the result of offering such cups, the sooner such a practice is put an end to the better. Mr. J. Ford may have infringed no positive written rule of the show, but I apprehend all right-thinking persons must feel that he has grossly infringed the rules of common justice.

I venture to submit another position. There may not be in the regulations governing any show a positive rule as to the ownership of the birds, and that they must belong to the exhibitor (I apprehend after Mr. Ford's letter it will always be added); but there is certainly an *implied* rule that the exhibitor must be the owner. Every exhibition has this rule, "Exhibitors will be requested to state the breed and age of their specimens." The birds cannot be *theirs* if they are borrowed specimens. Suppose I borrow a pen of poultry and take a cup at Birmingham or the Crystal Palace, has not my stock acquired a value which no way belongs to them? and if I dispose of them to others, am I not selling the birds and obtaining money under false pretences? Personally, I have no objection to dealers exhibiting, only let all exhibitors show their own birds and no others. Do not let us degrade our pleasure.

I have at times been applied to for birds as a loan; I have always steadily refused, although on one occasion the asker was one of my most intimate friends. I shall always do the same, for nothing that can be written will ever make me see it to be right. For a very small exhibitor I have had more, perhaps, than my share of success both in cups and money prizes, and I believe that far more entries would be made if the prizes were much smaller in amount, whilst more in number. Perhaps with such arrangements there might be less inducement for borrowing birds and the many other objectionable performances which Mr. Hewitt has noticed in his valuable remarks. To those remarks I would add, that all catalogues should have "Arrived too late," or "Not sent," against every pen so circumstanced. It is well for those who cannot attend the show to have as much information about it as possible.—Y. B. A. Z.

I MUST ask you to allow me, as one of the Committee of the Devizes Show, to put the facts of the case plainly before your readers. As many of them well know, our Show last year was held on the 12th and 13th of December—as favourable a time of the year for Pigeons as could be. I think no one will say our classification was bad, and our prizes were £1 and 10s. in each class, yet our total number of Pigeon entries amounted to but 126 in eighteen classes. Nor was this all, for with few exceptions the quality of the birds exhibited was of a very inferior description—a poor compensation for the loss the Pigeon classes entailed upon the Committee—so when we met to arrange the schedule for the forthcoming Show, it became a question whether we should again offer prizes for Pigeons. The meeting, however, was adjourned, and in the meantime we communicated with a few fanciers and others, and in consequence of the replies we received we decided to again offer prizes for Pigeons, also a cup, in the hope that this would induce exhibitors to support us who last year refused to do so, as we afterwards discovered, in consequence of our not offering any plate prizes; but to do this it must be remembered we did not reduce the scale of money prizes, so that the amateur who shows only one or two pens still has the chance of winning the same amount he did last year, whilst the larger exhibitor has the advantage of competing for a five-guinea piece of plate. All that we, the Committee, wish is to offer such a list of prizes for both poultry and Pigeons as will insure a good entry both as regards numbers and quality. To please all we do not expect, however anxious we may be to do so, but we can promise those who support our Show in either department that every care will be taken of their birds during the time they are under our charge; and as to the general management, we can with confidence refer to those exhibitors and others who paid a visit to Devizes Show in December, 1871.—ONE OF THE COMMITTEE.

THE EDINBURGH CHRISTMAS CLUB prize list for poultry is good. Three prizes are given in each class, and in addition there are ten cups, besides medals, and a valuable tea service.

THE MANCHESTER POULTRY AND PIGEON SHOW prizes are most liberal, being three nearly in all the classes, and £3, 30s., and 20s. respectively. There are seventy classes, and thirty classes for Pigeons.

THE MIDDLESBOROUGH ORNITHOLOGICAL ASSOCIATION'S SHOW.

THIS annual Exhibition of Canaries, Mules, and British Cage Birds, and also Stuffed British Birds, was held in the Cleveland Hall, Middlesborough, on the 25th and 26th inst. The Hall being spacious and well lighted, the birds were seen to great advantage. Mr. Jobling, Fleece Inn, Middlesborough, lent the Committee several cases of butterflies, stuffed birds, and small animals, which were much admired. The profits derived from this Exhibition will be handed over to the North Riding Infirmary. The entries numbered 313.

The Belgian Canaries were of fair quality, though better have been exhibited at these shows. The Norwich classes were well represented with birds of good quality. The prize birds were of high merit, the Evenly-marked birds well marked, and of high quality. Crested Norwich were good, and the prize-winners notably so. Coppy Crests were good as a whole. Lizards were well represented, and were of extra quality, and the prize-winners are sure to be heard of at future shows. Cinnamons were excellent. The Jonque and Buff prize birds were rich in colour and in good feather. Yorkshire birds were a show of themselves, numbering nearly ninety birds in five classes; better birds of their class have never been shown here, and they gave the Judge some trouble to adjudicate on. Green Canaries (not the Bronze) were good, all but one being noticed by the Judge. Evenly-marked Mules were well represented, and the prize-takers deserving. Dark Mules were also well shown. The first-prize Jonque was large, well furnished, and rich in colour. Linnet Mules were excellent, every bird being noticed. The first-prize bird was fine in quality, and almost clear; with health,

this bird has a prosperous career before it. Any other class of Mules, though small in numbers, was very interesting; the first was an almost Clear Goldfinch and Canary Mule (Buff), it having only a tick in front of the eye; it is a bird of fine quality and colour, and was shown in excellent plumage; the right wing was unfortunately damaged. The second prize went to a fair Bullfinch and Goldfinch Mule, and the third prize to a Goldfinch and Linnet. A Thrush, Brambling, and Bullfinch were the winners in the British Bird class.

BELGIAN.—Clear Yellow.—1 and 2, R. Robinson, Middlesbrough. 3, J. N. Harrison, Belper. c, W. Jones, Ulverston. **Clear Buff.**—1, W. Bulmer, Stockton. 2, R. Robinson, Middlesbrough. 3, W. Jones, c, J. Ross, Sheffield. T. Fawcett, Baildon (2). **Ticked or Variegated.**—1, W. Bulmer. 2, W. Forth; Pocklington. 3, R. Robinson. c, H. Headley.

NORWICH.—Clear Jonque.—1, 2, and 3, Adams & Athersuch, Coventry. vhc, Moore & Wynne, Northampton. hc, Tenniswood & Jobling, Middlesbrough. c, J. Stevens, **Clear Buff.**—1, 2, and 3, Adams & Athersuch. vhc, Moore & Wynne. hc, H. Headley.

NORWICH.—Evenly-marked Jonque.—1, 2, and 3, Adams & Athersuch. vhc, Moore & Wynne. **Evenly-marked Buff.**—1, 2, and 3, Adams & Athersuch. hc, S. Tomes, Northampton. c, Moore & Wynne.

NORWICH.—Ticked or Unevenly-marked Jonque.—1 and 2, Adams & Athersuch. 3, Moore & Wynne. hc, Z. Howe, Middlesbrough. c, J. Leonard. **Ticked or Unevenly-marked Buff.**—1 and 2, Adams & Athersuch. 3, W. Bulmer. c, Moore & Wynne.

NORWICH.—Crested.—1, 2, and 3, Wallace & Beloe, Berwick-on-Tweed. vhc, S. Tomes. c, Moore & Wynne.

COPPY CREST.—1, P. Rawnsley, Ledgate Green. 2, J. Stevens, Middlesbrough. 3, J. N. Harrison. vhc, T. Fawcett. hc, W. Cotton. c, L. Belk.

LIZARD.—Golden-spangled.—1, J. Taylor. 2, W. Watson, Darlington. 3 and hc, Ritchie, Dillington. vhc, J. Mann, Burton-on-Trent. c, J. N. Harrison. **Silver-spangled.**—1 and 3, R. Ritchie. 2 and vhc, J. Taylor. hc, R. Hawman.

LIZARD.—Broken-capped.—1 and c, R. Ritchie. 2, J. Taylor. 3, W. Watson. hc, J. Fairclough.

CINNAMON.—Jonque.—1 and 2, Wallace & Beloe. 3, W. Watson. vhc, J. Davenay. hc, W. Bulmer; W. W. Johnson; Moore & Wynne; J. Fairclough; J. Stevens. **Buff.**—1 and vhc, Wallace & Beloe. 2, J. N. Harrison. 3, Moore & Wynne. hc, W. Bulmer; J. Harris, Eston; J. Robson, Bedlington; S. Tomes. **Variegated.**—1, P. Rawnsley. 2, J. Stevens. 3, J. Whittaker, Great Horton.

YORKSHIRE.—Clear Yellow.—1, W. Thornton, Darlington. 2, T. Fawcett. 3, L. Belk, Dewsbury. vhc, W. Hutton; J. Davenay, Knaresborough. c, T. Wright, Great Busby; Pearson & Gardener, Middlesbrough. **Clear Buff.**—1 and 2, J. Garbutt, Broughton. 3, J. Bennett, North Ormesby. hc, T. Fawcett. W. Hutton. J. Cooper, Middlesbrough; W. Thornton. L. Belk; C. Holdsworth.

YORKSHIRE.—Evenly-marked Yellow.—1, L. Belk. 2, P. Rawnsley. 3, J. Whittaker. hc, M. Burton; R. Hawman; Tenniswood & Jobling; J. Stevens. **Evenly-marked Buff.**—1, L. Belk. 2, J. Robson. 3, J. Whittaker. vhc, J. Stevens. hc, W. Hutton; P. Rawnsley (2); G. Johnston, Middlesbrough; J. Stevens.

YORKSHIRE.—Ticked or Unevenly-marked.—1, P. Rawnsley. 2, J. Rowlands, Skelton. 3, J. Whittaker. hc, J. Cooper; J. Garbutt; H. Garbutt; J. Davenay. **GREEN.**—1, J. Vale, Pertonack, Stockton. 2, J. Rowland. 3 and vhc, J. Stephens. hc, R. Hawman; Pearson & Gardener. c, Woerth (2).

GOLDFINCH MULE.—Evenly-marked.—1, R. Hawman. 2, J. Cooper. 3, M. Burton. hc, P. Rawnsley; J. Stevens; Wallace & Beloe. **Dark.**—1 and 3, M. Burton, Middlesbrough. 2, Tenniswood & Jobling. hc, R. Hawman. c, Moore & Wynne.

LINNET MULE.—Variegated.—1 and 2, J. Stevens. 3, W. Hutton, Baildon. hc, W. Hutton; B. Lancaster, Wind Hill, Bradford.

ANY OTHER CLASS OF MULE.—1, J. Brown, jun., Penrith. 2, B. Lancaster. 3, P. Rawnsley.

GOLDFINCH MOULTED.—1, P. Rawnsley. 2, W. Forth. 3, C. Barton. **BROWN LIVER MOULTED.**—1, W. Forth. 2, Tenniswood & Jobling. 3, W. Carrick. c, J. Vale; W. Bulmer; R. Bottery, Stockton; W. Carrick.

BRITISH BIRDS.—Any other Variety.—1, J. Green, North Ormesby. 2, J. N. Harrison. 3, J. Davenay. c, Tenniswood & Jobling; B. Lancaster.

SELLING CLASS.—1, Z. Howe. 2, J. Garbutt. 3, J. Davenay. 4, W. Johnston. c, S. Tomes; G. Garbutt.

JUDGE.—Mr. Thomas Clark, Sunderland.

RABBITS AT THE CRYSTAL PALACE SHOW.—The Committee have decided to keep open the entry list until Saturday next. The entries are numerous, for in shows of Rabbits it is not always that a first prize of 30s. is given. As upon the success of this Show depends the future, we hope exhibitors will try to make it a great feature.

THE CRYSTAL PALACE CAT SHOW.

BUT a year or two ago and the Tortoiseshell and Tortoiseshell-and-white he Cats were deemed almost a myth, and yet at the fourth Crystal Palace Cat Show there were one of the former and three of the latter, the last being especially good specimens, two of them very rich in colour. Amongst the scarce colours in the Cats is the Red Tabby, and until now none have been exhibited, two brilliantly-coloured animals being sent. These facts are interesting to naturalists. Here, too, were to be seen Siamese, Japanese, Angora, Algerine, Persian, Russian, and other Cats. Here, also, came big Cats and little Cats, fat Cats and thin Cats, Cats shown for colour and Cats shown for size, the largest weighing 21½ lbs., No. 257, the property of Lieut. A. P. Hawthorn, which was duly honoured with a first prize; and, perhaps, the most beautiful and attractive in colour were the Royal Cats of Siam, exhibited by Lady Dorothy Nevill, both of which being prize-winners. Miss Hales, of Canterbury, took the silver medal presented by herself for the best long haired Cat in the Show with a most beautiful White Persian. The whole is an advance both in numbers and quality, particularly in the rarer-coloured varieties. The crowded attendance of the public also proves that this beautiful, docile, and graceful domestic animal, the Cat, is rising rapidly in the estimation of the visitors of the Crystal Palace.

The arrangements were very ably carried out by Mr. F.

Wilson, the Manager of the Natural History Department, the Cats all being as comfortable as at their own firesides.

TORTOISESHELL.—Short-haired.—He Cats.—1, M. L. Smith. She Cats.—1, E. Horner. 2, S. Bowyer. 3, M. L. Smith. hc, Mrs. Martin; W. Underdown. **TORTOISESHELL AND WHITE.—Short-haired.**—He Cats.—1, J. Hurry. 2, T. Goldsmith. 3, J. W. Berry. She Cats.—1, Master Boatright. 2, Mrs. J. H. Elliott. 3, Mrs. E. Ferguson. hc, H. Stroffon; H. Whittaker.

BROWN TABBY.—Short-haired.—He Cats.—1, Miss M. E. Moore. 2, Mrs. E. Elwood. 3, R. Pipe. She Cats.—1, C. J. Tilly. 2, Mrs. A. Heller. 3, J. Billing. **BITE OR SILVER TABBY.—Short-haired.**—He Cats.—1, F. W. Reynolds. 2, Mrs. M. Bertram. 3, Miss Ramsdale. She Cats.—1, W. Ellis. 3, Mrs. G. Ellis.

RED TABBY.—Short-haired.—He Cats.—1, Miss Wynchcombe. 2, Miss Forshall. 3, Madame Storely. hc, J. Rowley. She Cats.—1, Misses Standidge. 2, Mrs. Whalley.

SPOTTED TABBY.—Short-haired.—He Cats.—Whole class wrongly entered. She Cats.—1, Mrs. H. E. Newton.

BLACK AND WHITE.—Short-haired.—He Cats.—1, Miss Ferguson. 2, J. Penwill. 3, O. Pearson. She Cats.—1, W. Ogilvy. 2, J. Gressy. 3, J. Cesar.

BLACK.—Short-haired.—He Cats.—1, Mrs. Houndie. 2, T. Rochester. 3, S. Elsey. Extra 3, W. Mansfield. hc, M. Odle. She Cats.—1, Mrs. Shuckard. 2, Mrs. Dredon. 3, Miss Merchant. hc, Mrs. A. Barber; J. Cesar. c, W. Boulwood.

BLACK.—Short-haired.—He Cats.—1, Mrs. E. Ruskin. 2, J. G. Bulman. 3, Miss S. Thompson. hc, Mrs. Wickenden. She Cats.—1, S. Baldwin. 2, J. Harris. 3, T. Rochester. hc, P. Buchan; Miss C. Cotton; Misses Wragge.

UNUSUAL COLOUR.—Short-haired.—He Cats.—1, J. Bennett. 2, F. George. 3, P. H. Jones. hc, Miss Monk. She Cats.—1, Lady D. Nevill. 2, J. Walter. 3, S. S. Lord. hc, W. Street.

ANY VARIETY OF COLOUR OR SINGULAR FORM OF SPECIES, MANX, &c.—Short-haired.—He Cats.—1, J. R. Moore. 2, W. Buchan. **BLACK AND WHITE.—Short-haired.**—He Cats.—1, Miss Moore. She Cat.—1, W. Buchan. 2, Miss M. More. 3, Mrs. J. R. Moore.

KITTEN.—Short-haired.—She Cat.—1, Miss Moore. 2, Miss M. C. Fyle. 3, L. Ford. hc, T. Goldsmith.

PURE WHITE.—Long-haired.—He Cats.—1, Miss E. Fogerty. 2, J. S. Pocock. 3, Master P. Quartin. She Cats.—1, Miss Hales. 2, C. Jamrach. 3, E. D. Bradley. hc, S. A. Pocock.

BLACK.—Long-haired.—He Cats.—1, Miss Boville. 1, Miss Cottingham. She Cats.—1, Miss M. Armitage. 2, J. G. Musket. 3, Miss M. A. Lloyd.

TABBY.—Long-haired.—He Cats.—1, C. Jamrach. She Cats.—1, Miss A. Hill. 2, W. Flinton. 3, Miss Cottingham.

UNUSUAL COLOUR.—Long-haired.—He Cats.—1 and 2, Miss Hales. 3, Miss M. L. Bailey. hc, J. Harris. She Cats.—1, F. C. Winter. 2, Mrs. Taylor.

WHITE.—Long-haired.—1, Mrs. Denman. 2, Miss M. Armitage. 3, Miss Cottingham.

ANGORA OR PERSIAN.—Male or Female.—Medal, Miss Hales.

BLACK AND WHITE.—He Cat.—Belonging to Working Men.—Prize, Mrs. Crosby. hc, Miss E. Snelling; W. Martin. c, G. Grove.

TABBY AND WHITE.—He Cat.—Belonging to Working Men.—Prize, A. Martin. **GREY TABBY.—Oldest Short-haired.**—She Cat.—Prize, F. F. Snelling.

LITTER OF SHORT-HAIRED KITTENS.—Any Colour.—Belonging to Working Men.—Prize, R. Chipper. hc, W. Burgess; G. Darling; Mrs. Hoskins.

BLACK, BLACK AND WHITE.—Heaviest Short-haired.—1, J. Rose (17 lbs.). 2, Mrs. E. Hall (16 lbs.). 3, M. A. Price. Equal 3, G. Rose.

WHITE.—Heaviest Short-haired.—1, H. Roberts. 2, C. Church. 3, Mrs. W. Newbham.

TABBY.—Any Colour.—Heaviest Short-haired.—1, Lieut. A. P. Hawthorn (21½ lbs. weight). 2, J. Collins. 3, E. Hill. 4, Mrs. L. Andrews. hc, J. Waite.

UNUSUAL COLOUR.—Heaviest Short-haired.—1, Mrs. Gunner. 2, Lady D. Nevill. 3, J. Williams.

BLACK, BLACK AND WHITE.—Heaviest Long-haired.—1, J. Stanbridge. 2, T. Weightman.

WHITE.—Heaviest Long-haired.—1, T. Farnham & Son. 2, Mrs. F. Hodgson. **TABBY.—Any Colour.—Heaviest Long-haired.**—1, W. Watson. 2, Mrs. J. Kimpton. 3, H. Brix.

UNUSUAL COLOUR.—Heaviest Long-haired.—1, Miss Thatcher. 2, G. F. Cremer. 3, Mrs. Duke.

ANY WILD OR HYBRID BETWEEN WILD AND DOMESTIC, OR OTHER CAT.—1, G. Billett.

The Judges were Mr. John Jenner Weir, F.L.S., Mr. Harrison Weir, F.R.H.S., and Mr. W. B. Tegetmeier, F.Z.S.

THE KILMARNOCK ORNITHOLOGICAL ASSOCIATION'S SCHEDULE OF PRIZES.—It is still improving. Besides good money prizes are extra prizes of thirteen gilt timepieces under glass shades. There are twenty-nine poultry classes. Seven timepieces are given in the Pigeon department, which embraces nineteen classes; and two timepieces in the Canary department, which is divided into twelve classes, it will be seen from the advertisement that Mr. Robert Gibson is the Secretary, and that entries close on November 5th.

A GREAT TAKE OF HONEY.—A tree was felled the other day at Sandy Creek, Wagga Wagga, for the purpose of procuring honey, which it was known had been collected there by a rather large swarm of bees. When the tree was cut down there was found in the hollow one of the most astonishing collections of honey ever known, probably, to have been gathered by one swarm of bees. There were several immense layers of comb 10 feet in length, and of great density, extending along the inside of the trunk, and almost clothing the hollow of the tree entirely. After it had been carried home, having been wasted considerably by the fall of the tree and the primitive mode in which it was collected, the comb yielded over 200 lbs. of honey of the purest quality.—(Melbourne Argus.)

OUR LETTER BOX.

SHOWING A HEN WITH A PULLET (O. P.).—Where no age is specified you are at liberty to make the best pen you can. It is a disadvantage to put an old heavy hen with a smart unfurnished pullet; but if they match, the pullet gives a sprightliness to the pen you will look for in vain from the hen.

TARES FOR FOWLS (C. S.).—We have never tried tares for poultry, and do not feel disposed to do so. Our feeding is confined to ground oats and barley, with maize and kitchen scraps. Nothing we have ever tried has done so well as that. We have known white peas given to Spanish and Game to make the

feather hard. It succeeds in that particular, but peas and beans spoil poultry for the table—they make it hard.

EXCRESCENCES ON BANTAMS' LEGS (J. M.).—The excrescence you mention is a recent introduction, but it has become very common in all breeds except Dorkings and Game. The sulphur ointment is good. It is also an excellent plan to keep the legs constantly moistened with oil. We should kill the Black Bantam cockerel, unless it be a very valuable bird. Pills of camphor, two the size of a garden pea daily, form the best medical treatment.

WHITE FOWLS FOR EXHIBITION (Intending Exhibitor).—White fowls in the country should be clean enough to render no washing necessary except the legs. They may be washed with soap and water and a piece of flannel. Very many of the white fowls exhibited are washed. The operation should take place two or three days before they are required for exhibition. Warm, not hot water, with a little soap, applied with a piece of flannel or a sponge, and gently rubbed the right way of the feather, will take off all outward dirt. The inside of the feather is never dirty. When the dirt is removed it is necessary at this time of year to put the birds in an open basket, with some hay or soft straw, before a fire till they are dry. Care must then be taken they do not again become dirty, as there would not be time to clean them, and the operation does not improve the plumage.

BREEDING BLACK RED GAME FOWLS (G. H. F.).—As a rule, it is the Duck-wing wants the Black Red. In any case it is done to supply colour where it is needed. Wheaten hens are as useful as any others. The colour is a fancy. We should not breed from a rusty-winged hen if we had another without any mixture. It should be dark red.

MALAYS FOR SHOWING (Undecided).—Show the cockerel and the largest pullet. In all probability the slight variation you name will never be noticed. Choose your birds large, upstanding, with drooping tails, with naked throats, crops, and joints of wings, crooked breasts. If your birds are handled the crooked breasts will disqualify them. They do not interfere with laying or sitting. As a rule, a crooked breast is a sign of great weakness, and no one would choose such birds to breed from. Good feeding and painstaking have caused rapid growth, so rapid that the weight is too great for the cartilaginous limbs to carry, and the breast rests on any support it can—generally the perch, hence the curve.

SPURRED HENS (G. W. H.).—It is by no means a disqualification for a hen to have spurs, nor is it all an uncommon thing for a pullet to have them. They are very common in Dorkings and Crève-Cœurs.

BRAHMAS AND DARK DORKINGS (H. F. H.).—The weight of your Brahma cockerel is excellent, that of the pullet the same. We know the birds you mention as having nearly black heads and necks. They do not rank high, and as a rule should be weeded out. Against better coloured birds they would have no chance. The less white they have the better; but a little is less objectionable than black. A crooked-breasted Dorking should never take a prize, and should not, therefore, be exhibited. The defect is generally hereditary. Birds that take prizes should always be banded. There are many serious faults that can escape the eye however practised. A Dorking cannot be too dark unless it is nearly black. It is also well in these very dark birds there should be the appearance of spangling or shading. It was a mistake to commend a crooked-breasted cock.

SPANISH COCK'S COME SHRIVELLED (Sergeant).—It is a very common thing for the comb of a Spanish cock to shrivel in the moulting season, but yours seems to have something more trying than the natural temporary falling-off. This breed is more subject to atrophy than any other, and it is almost always fatal. The symptoms you complain of may arise from a stoppage. We advise you to give him a table-spoonful of castor oil, and to feed on bread and ale. That will probably relieve him. You must then feed him often on soft light food, as ground oats or bread and milk. If it be atrophy there is only one remedy that gives any hope of a cure. It is to feed him on the yolks of new-laid eggs. This remedy is costly and mischievous, you must weigh it against the value of the patient.

LAYERS FOR LONDON (W. J.).—We believe those who recommended Brahmas were right. They bear confinement well, and are not more prone to sit than any others. The non-sitting breeds are the greatest layers, but most of them require good runs. The Spanish and Houdans are the hardest, the Crève-Cœur next. Pullets will easily pay their food with their eggs in the winter. No hens lay in the winter. If eggs are to pay the expenses of their producers, they must be laid in the scarsest time—i.e., the winter.

ARTIFICIAL FOOD FOR FOWLS (C. M.).—We have never tried any of the foods for poultry. Our friends who have used them have given them up being satisfied with the ordinary farinaceous foods.

ROUEN DUCKS (S. T.).—The first quality of a Rouen Duck and drake is to be very large. They should weigh from 15 lbs. to 18 lbs. per pair. Their colours and markings should be identical with those of the wild Duck. The prevailing faults are leaden-coloured bills in the Ducks, and white feathers. The former should be like a horse-bean, brown in centre, edged and tipped with yellow, no white feathers in any part of the plumage. The fault in the drake is generally a partly grey instead of a roan breast, and too much white ring round the neck. Blue bill or white feather in the Duck, and grey breast or white feathers in the drake, are all disqualifications.

COCKERELS FOR STOCK (J. H.).—It is always better to let the cockerels attain the age of eight or nine months before they are used as stock birds. You may safely use those you name in January next. It would make little difference if they were put together in December, as in the depth of winter they do not much notice the pullets. We think four pullets better than six till the middle of February. If you put hens to these cockerels you may sit all they lay. You must now sit the early eggs of the pullets.

BOOTED BANTAMS (Jack).—The Editors recommend you to write to Mr. W. B. Jeffries, Henley Road, Ipswich, for information about the Bantams.

CROYDON POULTRY SHOW.—In answer to Mr. E. Tudman's letter in your last issue, we beg to say that we did employ both trustworthy and experienced men to handle the birds, although it was our first Show, that the specimens were packed as soon on the following day as they had been well fed, and were dispatched before mid-day. We are very sorry that one of his hens should have received an injury.—EDRIDGE & NALDER, Hon. Secs. [It is rather unfortunate that we have a complaint from Mrs. Turner Turner of an injury, probably fatal, that one of her best pullets received at the same Show, and she considers it was inflicted in dragging it out of the hamper by one leg. She justly observes that those who are fond of their birds will avoid shows where such disasters occur. At the same time it must be remembered that the inquisitive officials of railways have been proved to be the causers of similar injuries.—Eds.]

FALKIRK POULTRY, PIGEON, AND RABBIT SHOW.—We have received a letter from Mr. Roberts, the Secretary, stating that the Exhibition was unavoidably fixed for the same days as the Show at the Crystal Palace, for on no other days until after three months could the use of the Corn Exchange have been obtained. We think the two Shows will not weaken each other, and the Rabbit Show especially, which is rather an unusual exhibition in Scotland.

PIGEONS GOING LIGHT (W. Myatt).—Your letter is an advertisement. If your friend has a remedy let him give it a name and advertise it.

METEOROLOGICAL OBSERVATIONS, CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	A.M.		IN THE DAY.						
	Barometer at 6 a.m. and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Temperature.		Radiation Temperature.	
		Dry.	Wet.			Max.	Min.	In sun.	On grass.
1872.									
Oct.									
We. 23	Inches. 29.784	deg. 86.2	deg. 36.2	W.	deg. 48.3	deg. 53.2	deg. 83.6	deg. 89.5	deg. 80.2
Th. 24	29.435	51.2	47.8	S.E.	47.4	52.8	35.6	68.3	33.9
Fri. 25	29.293	51.8	49.2	S.	48.2	53.4	43.2	80.2	39.3
Sat. 26	29.289	47.4	47.2	S.	48.4	56.2	46.2	84.6	41.5
Sun. 27	29.629	50.6	48.4	N.E.	48.6	58.2	44.9	85.1	41.0
Mo. 28	29.696	48.8	48.0	N.E.	48.7	56.0	44.4	83.7	40.8
Tu. 29	30.071	46.5	46.3	W.	47.8	57.2	37.9	78.5	33.8
Means	29.600	47.5	46.2		48.2	55.3	40.8	81.4	37.2

REMARKS.

23rd.—Very foggy early, but after 9.30 beautiful bright day; starlight between 9 and 10 p.m., but cloudy after.
24th.—Fine morning, but began to rain about noon; very wet afternoon; starlight at 9 p.m.; rain from 11 to midnight.
25th.—Fine bright early morning; dull soon after 9 a.m.; showery at intervals during the day; very wet evening and cloudy night.
26th.—Very wet morning; bright between noon and 2 p.m.; at 4.55 a gale of wind, scarce lasting more than a minute; heavy rain during the evening and night.
27th.—Foggy morning; a fine day, and not cold; damp night.
28th.—A little cloudy and dull in the morning, but sunshiny day and starlight night.
29th.—Very bright and fine till noon, then rather cloudy, but very pleasant. Barometer, though rather higher than last week, is still low, the rainfall excessive, and the air very damp. The temperature is much the same as during the previous fortnight, while the ground temperature is remarkably so, the means for three consecutive weeks having been respectively 48.3°, 48.3°, and 48.2°.—G. J. SYMONS.

COVENT GARDEN MARKET.—OCTOBER 30.

A GENERAL dullness pervades the markets, and prices are barely maintained in ordinary goods. Common Apples and Pears make but poor returns. Cob nuts and the best descriptions of Potatoes have again advanced, and seem likely to be in much request.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	½	sieve	0	to 5	0	Mulberries.....	½	lb.	0 to 0 0
Apricots.....	doz.	0	0	0	0	Nectarines.....	doz.	0	0
Cherries.....	per lb.	0	0	0	0	Oranges.....	½	100	10 0 20 0
Chestnuts.....	bushel	12	0	20	0	Peaches.....	doz.	10	0 25 0
Currants.....	½	sieve	0	0	0	Pears, kitchen.....	doz.	1	0 8 0
Black.....	do.	0	0	0	0	dessert.....	doz.	2	0 4 0
Figs.....	doz.	0	0	0	0	Pine Apples.....	½	lb.	0 0 0
Filberts.....	lb.	1	0	1	6	Plums.....	½	sieve	6 0 9 0
Cob.....	lb.	1	0	2	0	Quinces.....	doz.	1	0 2 0
Gooseberries.....	quart	0	0	0	0	Gosberries.....	lb.	0	0 0 0
Grapes, hothouse.....	lb.	2	0	5	0	Strawberries.....	½	lb.	0 0 0
Lemons.....	½	100	6	10	0	Walnuts.....	bushel	15	0 80 0
Melons.....	each	2	0	5	0	ditto.....	½	100	8 0 0 0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	doz.	2	0	to 4	0	Mushrooms.....	pottle	1	0 to 3 0
Asparagus.....	½	100	0	0	0	Mustard & Cress.....	punnet	0	2 0 0
Beans, Kidney.....	½	sieve	0	0	0	Onions.....	½	bushel	2 0 4 0
Broad.....	bushel	0	0	0	0	pickling.....	quart	0	6 0 0
Beet, Red.....	doz.	1	0	8	0	Parsley per doz. bunches	2	0	3 0
Broccoli.....	bundle	0	3	1	6	Parsnips.....	doz.	4	0 1 0
Cabbage.....	doz.	1	0	1	6	Peas.....	quart	0	0 0 0
Capsicums.....	½	100	2	0	3	Potatoes.....	bushel	3	6 5 6
Carrots.....	bunch	0	6	0	0	Kidney.....	do.	0	0 0 0
Cauliflower.....	doz.	2	0	4	0	Round.....	do.	0	0 0 0
Celery.....	bundle	1	6	2	0	Radishes.....	doz. bunches	1	0 1 0
Coleworts.....	doz. bunches	2	0	3	0	Rhubarb.....	bundle	0	0 0 0
Cucumbers.....	each	0	3	1	0	Salsify.....	½	bundle	0 0 1 0
Endive.....	doz.	0	0	0	0	Savoy.....	doz.	0	0 0 0
Endive.....	doz.	2	0	0	0	Scorzoneria.....	½	bundle	0 9 1 0
Fennel.....	bunch	0	3	0	0	Sea-kale.....	basket	0	0 0 0
Garlic.....	lb.	0	6	0	0	Shallots.....	lb.	0	8 0 0
Herbs.....	bunch	0	8	0	0	Spinach.....	bushel	2	0 3 0
Horseradish.....	bundle	3	0	4	0	Tomatoes.....	doz.	1	0 2 0
Leeks.....	bunch	0	2	0	0	Turnips.....	bunch	0	8 0 0
Lettuce.....	doz.	9	1	0	0	Vegetable Marrows.....	doz.	0	0 0 0

POULTRY MARKET.—OCTOBER 30.

THERE is but a dull trade. The supply is moderate. Pheasants come in increased numbers, and the price of them is falling.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls.....	8	0	to 8	6	Hares.....	3	to 3	6	
Smaller ditto.....	2	6	8	0	Rabbits.....	1	5	1	6
Chickens.....	1	9	2	0	Wild ditto.....	0	9	0	10
Geese.....	7	0	7	6	Pigeons.....	0	10	1	0
Ducks.....	0	0	0	0	Pheasants.....	2	6	3	0
Grouse.....	1	9	2	0	Partridges.....	1	6	1	0

WEEKLY CALENDAR.

Day of Month.	Day of Week.	NOVEMBER 7—13, 1872.	Average Temperature near London.			Rain in 43 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.				
			Day.	Night.	Mean.	Days.	m.	h.	m.	h.	m.	h.					
7	Th	Meeting of Linnean Society, 8 P.M.	52.1	36.7	44.4	20	7	af 7	21	af 4	49	1	52 9	312			
8	F	Cambridge Term divides.	52.0	34.3	43.1	19	8	7	19	4	18	2	11 11	313			
9	S	PRINCE OF WALES BORN, 1841.	50.5	33.8	42.2	16	10	7	18	4	40	2	morn.	8	15	59	314
10	SUN	24 SUNDAY AFTER TRINITY.	50.4	34.0	42.2	24	11	7	16	4	59	2	42 0	9	15	53	315
11	M	Stoke Newington Chrysanthemum Show opens.	50.2	34.2	42.2	15	13	7	14	4	14	3	5 2	10	15	46	316
12	Tu	" " closes.	50.2	33.8	42.0	17	14	7	13	4	29	3	26 3	11	15	39	317
13	W	Royal Jersey Horticultural Exhibition.	49.9	35.2	42.6	22	16	7	11	4	45	8	46 4	12	15	30	318

From observations taken near London during forty-three years, the average day temperature of the week is 50.8°; and its night temperature 34.6°. The greatest heat was 63°, on the 12th, 1841; and the lowest cold 17°, on the 9th, 1864. The greatest fall of rain was 1.16 inch.

NOTES ON THE CAMELLIA.

IT is now some years since the use of fresh-cut turfy loam was advocated in this Journal as the best material in which to pot the Camellia; and by the number of communications which appeared at that time and subsequently, it would seem that many of your readers have given it a trial, and they must by this time be able to speak confidently about it. Many years previously to Mr. Pearson's remarks appearing in print I had seen turfy loam used—not light loam, but that which would be termed medium; the plants, however, did not take kindly to the potting material, making very weakly growths. About the same time I had to repot a collection of Camellias; and the only potting material that could be obtained was very black peat earth, the small hillocks which the moles cast up being gathered for this purpose. The plants made very good growth in this, and the foliage was of a deep healthy green. After that time I used turfy peat, with a small proportion of turfy loam added to it. I have also tried the loam which can be obtained here; it is a very light sandy loam, and the plants succeeded in it for a time, but afterwards the leaves assumed a sickly colour, and it was thought desirable to return to the turfy peat and loam for potting.

I do not know whether it is general, but the plants have made unusually good growth this season, and are well set with flower-buds. A cloudy wet season, with a temperature below the average, seems to suit them. There are some plants which the modern system of hothouse building does not agree with, and the Camellia is amongst the number. Large panes of glass and close glazing look very well from an architectural point of view, but for many practical purposes the old system, with closely-placed bars and small panes, is the best. To many persons this may seem downright heresy; it is an opinion shared, nevertheless, by some of our best practical gardeners. At this place, in a closely-glazed lean-to vinery in which the squares of glass are very large, I have much difficulty in keeping the leaves of the Vines from being scorched before the Grapes are ripe. Especially is this the case with the old Muscat of Alexandria. I pointed out this to a friend on one occasion, a very successful plant-grower, and in a conversation that followed my friend made this remark—"I believe that the modern style of hothouse building has killed nearly all the fine old Camellias"—he was speaking of the neighbourhood of London. Again, take the now-popular Orchid family; it is pretty well known that they do not succeed nearly so well in the new style of hothouse as they did in the old-fashioned houses where the small squares of glass were used. In the old style so much artificial shading was not required; it was only necessary to use canvas screens during very hot weather. Shading of some sort is absolutely necessary, but the less it is required the better for the plants. The small squares of glass may also create a purer atmosphere by the admission of air between the

panes, as the glass does not always fit so tightly but that there are minute spaces through which air is admitted.

Having said thus much, I do not wish it to be inferred that I am an advocate for the old system for every purpose. There are some classes of plants that require as much light as can possibly be afforded them; and in the northern parts of these islands an unintercepted admission of the sun's rays may be desirable. Doubtless there are many sides to this question, and taking into consideration the large number of persons who can now afford the luxury of glass structures, its importance is obvious, and I should much like the opinion of some of our best practical gardeners on the matter.

At any rate, as regards the Camellia, it will be found that the old style of house with a west aspect, a lean-to or half-span, suits it best. The plants must also be shaded from the sun's rays during summer. If a whole house can be given up to their culture it is comparatively easy. A greenhouse temperature suits them nearly all the year round. At the time they are making their young wood a close, moist, and rather high temperature is desirable. When the plants are grown in a greenhouse with other plants it is best to remove them to a warmer house to make their growth. Some growers remove their plants out of doors after the buds are set, but this I do not approve of; there is always danger of the buds dropping off when they are removed to the house in the autumn. Of course, with good management this may be avoided; it is not so much the change of temperature that is the cause, it is, I think, mainly the atmospheric change; they are removed from a moist to a dry atmosphere, consequently a check is experienced, and the buds drop. After the plants are taken inside they should be dewed over once or twice a-day with a syringe for about a week or ten days, after which they will be safe. It is also highly important to keep the roots in a healthy growing state, as few plants are more easily injured either from being stinted or from an excess of water. An overdry atmosphere, caused by overheating the pipes or flues in winter, is a frequent cause of buds dropping.

The Camellia does not require to be potted frequently, so that the operation ought to be carefully performed. The crocks should be carefully placed at the bottom, and over them put some tough fibrous peat or loam. If the plants require repotting and are in good condition, a large quantity of tender white fleshy roots will be found round the outside of the ball of earth. These active rootlets ought not to be destroyed, some of the surface mould should be removed, and a little should be carefully picked out from the ball, if it can be done without much injury to the roots; but if the roots are in bad condition from having grown in unsuitable material, it will be better to shake the soil away from them as much as possible before repotting.

Camellias should be kept quite clean. If the plants are small, and the collection is not large, it is best to wash the leaves separately with a sponge, using tepid water in which some soft soap has been dissolved. Frequent syringing during the summer months will help to keep

the plants clean, no scale nor bug ought to remain on them; red spider will also do considerable damage during hot weather in summer if syringing be neglected. Amateurs ought to observe that the *Camellia* is comparatively hardy, and will stand 20° of frost; it is more likely to be injured by heat in winter than by cold.—J. DOUGLAS.

FUNKIAS.

THIS beautiful tribe of fine-foliaged plants, like many other perennials with attractive foliage and flowers, is not sufficiently taken advantage of by those who appreciate elegance of form as well as colour in their flower gardens. Indeed, so rarely do we find Funkias used, that it is obvious few have ever seen the magnificent displays they produce in masses. For outdoor decoration of a sub-tropical aspect they far surpass any of the usual sub-tropical plants, as, unlike these, they succeed admirably in the coldest district. The somewhat tough texture of their leaves fits them for being planted in exposed situations, where tender fine-foliaged plants soon assume a ragged unsightly appearance. In habit they very much resemble the dwarf form of *Cannas*, and have oval leaves longitudinally striped with golden yellow, pure white, and deep green. The flowers, which are borne on small peduncles, are slightly raised above the foliage, and are principally of a puce colour. They are not, however, very attractive, and are of short duration.

In the dwarf section *Funkia ovata variegata*, *F. lanceifolia*, and *F. japonica lutea variegata*, are amongst the finest, and seldom exceed 9 inches in height. Of the taller kinds, *F. umbellata aurea variegata*, *F. caerulea*, *F. undulata*, and *F. Sieboldiana*, are the handsomest, and frequently attain a height of 18 or 20 inches.

For bedding purposes, where a stock has to be secured, raising the plants from seed will be more expeditious than having to resort to the tedious process of dividing a few crowns. The most certain mode of obtaining seed in a mature state is to retain a few plants and grow them in pots under glass during the summer. A greenhouse or frame does very well, a little fire heat being afforded in autumn if required. Sow the seed early in spring in pots or small pans filled with a mixture of silver sand and peat, and if these be plunged in gentle bottom heat it will soon germinate. When large enough to handle, the young plants may be placed singly in small pots, or be pricked-off into boxes, there to remain until May, when they should be planted out in the reserve ground. The soil should be deep and rich, and the situation warm and sheltered. Attention must be paid to watering liberally in dry weather, as the principal object during this period is to encourage the growth of strong crowns suitable for bedding in the following season.

It is not necessary to lift the plants until the foliage has died down, which generally is towards the end of October. This also applies to those which may have been planted in the flower garden. The roots should be carefully lifted, and, after having been potted, placed in a cold frame with a covering of ashes or cocoa-nut fibre. Thus treated they remain in an excellent state of preservation until March, when they should be shaken from the pots and repotted in an open mixture of loam, peat, and silver sand, in equal parts. In the potting the largest crowns may be divided. The whole should be placed in gentle heat, which greatly encourages free growth, and the plants must be gradually hardened off and turned out with the other bedders in May. In preparing the beds a rich deep loam should be employed, as being most conducive to the production of fine foliage, which is so much admired either when Funkias are planted in groups by themselves, or along with other ornamental-leaved subjects.

For forcing purposes during the winter and early spring months the Funkias are extremely useful, supplying at that time an abundance of foliage not to be obtained from any class of greenhouse plants; moreover, their usual rich-coloured foliage is then of a more delicate tint than when exposed during summer. The timely introduction of succulents and other fine-foliaged plants, has modified the predominance, and rescued our flower gardens from an undue excess of colour, but in our winter and spring flower-houses there is a great deficiency of contrasting or harmonising foliage—a deficiency which is not easily remedied, especially amongst early forced roots and bulbs, the blooms of which are seldom accompanied with much foliage. Even the *Lily of the Valley*, which is naturally luxuriant in leaf-growth, frequently produces its sprays of bloom without foliage. As a means of compensating

for this deficiency of foliage early in the year, I have found no class of plants can compete with the Funkias, as they are so easily forced. If they have been doing service in the flower garden during the summer, it is not yet too late to secure from them a display throughout the winter.

With this object in view, while lifting the crowns, the strongest and best matured should be selected, having previously prepared a nice compost of loam, peat, silver sand, and a sprinkling of leaf mould. In this they should be at once potted, using 48-sized pots for the largest single crowns, or three may be placed in a 6-inch pot. After potting give a good watering, and place the pots in a cold frame with a covering overhead, as recommended for lifted plants. In three weeks the plants will have become sufficiently established in their pots for a few to be removed into a forcing pit with a humid atmosphere, where a temperature of not less than 60° can be maintained. Under this treatment they make rapid growth, and soon develop their leaves. Successional lots may be introduced into heat as required. The first, however, if placed in heat at the beginning or towards the middle of November, will be found very useful in December, and under ordinary treatment will retain their pleasing hues for a considerable length of time. The plants which have been thus made use of should, when done with, be carefully attended to with water, and be planted out in May in the reserve ground to recruit their energies; they again form vigorous plants well adapted for forcing the second year.—J. M. C.

MORE ABOUT ROSES.

MY Roses this year have been very good: out of eight hundred plants I have had very little occasion to find fault with any of them. The season has been far from favourable for fine blooms, many of them rotting-off when only half grown, which, I suppose, is owing to the wet.

Amongst summer Roses the following have been very good:—Baroness Rothschild, Victor Verdier, Sénateur Vaisse, La France, Duke of Edinburgh, Charles Lefebvre, Dr. Andry, François Louvat, Alfred Colomb. The last-named I could not get to bloom to my mind on the Manetti stock, though it was first-rate on the Briar. Prince [?] Christian is a poor addition to our light class of Roses, but beautiful when half expanded. I do not know how it is, but I can never get *Xavier Olibo* good, except from maiden plants. Amongst the autumn bloomers the following are very fine:—Auguste Mie, Victor Verdier, Madame Eugénie Verdier, La France, and the ever-faithful *Gloire de Dijon*.

I had my plants much affected with mildew in July, and reading in Mr. Cranston's book that soot was an effectual remedy, I thought I could not do better than give it a trial; so, procuring a quantity, I gave my plants a dose, which I certainly meant to kill or cure. After leaving it on for a couple of days (too long, I am afraid) I proceeded to syringe it off, when I found it had not only cured them, but very nearly killed them as well, it having killed all the young shoots, and turned all the leaves quite brown, and when touched with the hand they all crumbled to bits. In future I shall be more cautious in the use of soot. I have no doubt it would stay the ravages of mildew if given in time, and not overdone.

Some Roses are much more liable to mildew than others; I have several plants of *Lord Raglan*, which is always affected with it. All being well, I intend kicking his lordship out of my collection next year, as I believe him to be guilty of bringing the pest amongst my favourites.—T. J. HARRISON, *Farnham*.

DAHLIA COLIBI AS A BEDDER.—As this fine bedding Dahlia is so little known, and consequently but rarely grown, I am induced to make a few remarks respecting it. About three years ago a friend strongly recommended it to me as being the best bedder of the day. I therefore ordered one dozen plants and gave them a trial; and I was so much pleased with the result that in the following year I filled, or rather planted, four large beds, and the effect was such as to arrest the attention of everyone who approached them. So pleasing was the display when massed, that many were the inquiries, What have you here? *Dahlia Colibi* is of sturdy growth and a most profuse and continual bloomer; height 2 feet; colour a rich orange scarlet. The flower is of good form and substance, and does not show the eye till some days after it is at perfection. I can, and do without the slightest hesitation, recommend *Dahlia Colibi* to all, particularly to those who, like myself, require a

great variety of bedding plants.—J. GARDNER, *Elsham Hall Gardens, Brigg.*

A KNOWLEDGE OF DRAWING FOR GARDENERS.

THE winter is at hand, bringing with it long evenings and opportunities for self-improvement. Now, I know of few branches of knowledge more useful and interesting to a gardener than drawing. The mechanical portion is particularly suited to young men engaged in gardening pursuits. It can be studied by an isolated individual, or by several persons together if they are like-minded; and to those who have a desire to find a suitable employment in leisure hours during the winter season, I know of no pursuit which recommends itself more than drawing.

Where to begin and how to begin, is a difficulty which deters many. If an artisans' evening class for drawing is within your reach, by all means take advantage of it. You will there learn the great extent of the subject, many of the early difficulties will be smoothed, and you will find that a small portion of accurate knowledge will be of great practical use. An hour or two of steady application to a subject of this kind each evening affords a rest to the mind, and leaves it better prepared for returning to the more engrossing pursuit of gardening, just as a day's holiday makes the burden of daily care seem lighter by its removal for the time being.

If you cannot join a drawing class you must be your own teacher. You will then require an instruction book of some kind, as well as a few drawing materials—viz., a drawing-board, T-square, a few drawing pins, and a small case of instruments. I think geometry is the most suitable branch to begin with, and a very useful book for a beginning is Cassell's "Linear Drawing," 2s.; it is specially designed for self-tuition, the directions are plain and very easily understood, and the author supposes that the pupil has no previous knowledge of the subject. Afterwards, if the pupil wishes to acquire a more general acquaintance with the subject, I know of no better work for self-teaching than Cassell's "Technical Educator," which is now being issued in monthly parts. The lessons on drawing are very plain and practical, with good instructions for colouring drawings, and the proper use of the instruments.

One thing I would endeavour to impress on the minds of any commencing geometry, &c.—namely, aim at absolute accuracy from the first. Do not be content if the lines are nearly right, but try again, and again, till the work is perfect, and exactness will then become habitual. Another point I would mention is, to let the pupil from the beginning accustom himself to the use of the inking instruments. To ink neatly requires considerable practice, and much depends on the inking pen being in good order and the ink pure.

After the pupil has gone through the lessons on geometry, let him learn the use of the scale, and, beginning with simple structures, draw plans and sections of glass buildings, remembering the previous hints with regard to accuracy.

If a gardener can draw he can make his own plans for new houses, &c., and arrange every detail at his leisure, instead of being to a great extent at the mercy of the builder; he can also form a better judgment as to whether the work is being satisfactorily executed. The use of drawing in the formation of flower gardens is, of course, apparent to any practical gardener.—W. P.

LARGE-CROWNED PINE APPLES—GLOXINIAS.

I HAVE lately seen inquiries made about overlarge crowns on Pine Apples, and in reply I can state the following remedy for the evil.

As soon as a crown is of the desired size I take a not very sharp-pointed but sharp-edged flower-stick about 8 inches in length, insert it into the centre of the crown, and twist it like a gimblet into the heart of it; I then remove the few loosened leaves, and the crown will cease to grow, but the operation is not detrimental to the swelling of the fruit.

An article appeared on page 272, in which it is stated that *Gloxinia maculata* and *speciosa* were both introduced into Europe in 1739 from South America. I beg to differ from Mr. A. Kerr, inasmuch as L'Heritier, a French botanist, brought *Gloxinia maculata* first into public notice as late as 1774, the plant being named in honour of P. H. Gloxin, of Strasburg, who published several articles on botany in 1775. As for *Gloxinia speciosa*, it flowered for the first time in Europe in

Loddiges' establishment in 1817; and I daresay some aged members of the profession will recollect the sensation caused in the gardening world on the first plant developing its blue flowers.—A. WIFE, *Gardener, Heighington Hall.*

[You are wrong relative to *G. maculata*. It was discovered by Mr. Robert Millar near Carthage in South America, who sent seeds to Europe; and Mr. Philip Miller, author of the well-known Dictionary, cultivated it in 1739.—Eds.]

MYSTERIOUS DISAPPEARANCE OF SPANISH CHESTNUTS.

ON Saturday, October 26th, I placed in a basket on the floor of my fruit-room rather more than a peck and a half of Spanish Chestnuts, thinking to store them away in sand on Monday. I saw them all safe about ten o'clock on Sunday morning, but upon going in about the same time on Monday every Chestnut had disappeared out of the basket, and, what was worse, out of sight; so, as the window was fast, the door locked, and the key had not been out of my possession—there being, moreover, no other aperture by which anyone could gain access to them—we commenced moving some seed Potatoes, Beetroot, Onions, and, in fact, everything except an empty barrel standing upon some bricks, and not a single nut could we find. The head of this barrel was out, a piece of lath across the top, and upon that some garden mats. We did not for one moment expect to find them there, as the distance from the basket to the top of the barrel was 11½ feet; but to my great surprise, when the mats were removed there were the Chestnuts, and the industrious little fellow that had so mysteriously emptied my basket (a mouse), which seemed rather alarmed at my appearance at his storeroom; but of course he had no chance to make his escape, so had to suffer the penalty of death for his pains. He was a large light brown mouse with a very long tail, but nothing approaching to a rat either in size or colour. I have no doubt that many will read this, and not only think, but say, that it was impossible for a mouse to convey the Chestnuts from the basket to the barrel in the space of twenty-four hours, which he did, and by himself, I believe, as no trace of any other mouse has been seen since then in the room or near it, and there was no chance for a rat to have assisted him, as there was not even a mouse-hole. This little fellow must have got in some time when the door was open.—S. TAYLOR, *Sion Hill, Kidderminster.*

[The stealer and storer was not a house mouse, but the garden mouse, *Mus sylvaticus*; it frequently comes into a house at this time of the year, and establishes a store.—Eds.]

WATER PREVENTING FREEZING.

COULD you or your correspondents tell me whether placing a pailful of cold water in a room would keep away frost, so that Potatoes spread on the floor should not be frosted when there was ice on the water half an inch thick? I have never tried it myself, but an old man assured me that it would, and that he had done it dozens of times. He says the water draws the frost to it, and so the Potatoes escape unhurt.—A. P., *Charlton.*

[As long as the water remained unfrozen the Potatoes would probably remain uninjured, for the obvious reason that the cold is not sufficiently low to cause freezing; but so soon as ice appeared upon the water the Potatoes would be badly off. As for the water drawing the frost to it, that is only the utterance of ignorance. Water in freezing gives out heat, and so for a short time would render the air less cold than if the water were not there.—Eds.]

BOILERS AT THE ROYAL HORTICULTURAL SOCIETY'S BIRMINGHAM EXHIBITION.

No. 4.

CONTINUING our notes, we come next to Stand 54, Mr. Edwin Lumby, West Grove Works, Halifax, Yorkshire, who had for competition a boiler called the Excelsior. It is cylindrical, made of wrought iron, with two flows and two return pipes. The smoke is made to traverse the outside of the boiler, passing through an aperture with a smoke-grating left on one side of the boiler; and by means of midfeathers placed on two sides of the boiler the smoke is made to descend under the midfeather and to rise on the opposite side, the draught being divided, and the whole of the boiler encircled with the products of com-

bustion. The circulation in this boiler will be rapid. Its chief fault is that it is fed from the upper part of the boiler, and is more suited to burn coke than coal or cinders; with this exception we have no doubt it will prove an efficient boiler.

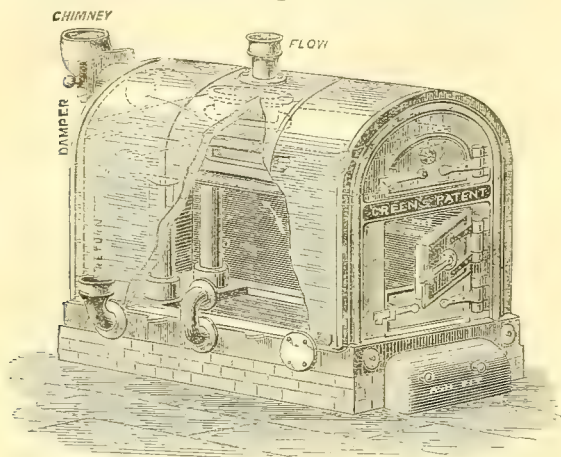
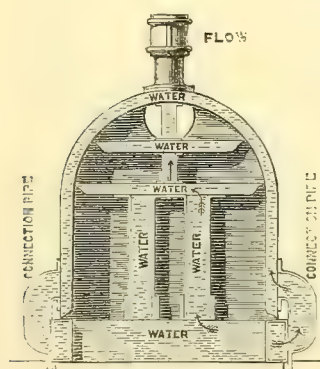


Fig. 1.

The next stand was that of Thomas Green & Sons, Smithfield Ironworks, Leeds, who had a boiler for competition (figs. 1, 2, 3, 4), which requires no brickwork for setting. It is of the shape of a saddle boiler, 4 feet long, 20 inches wide, and 30 inches

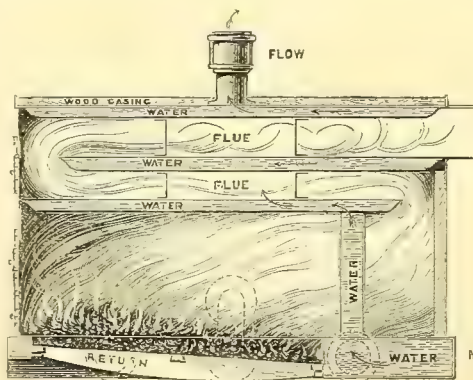
or where the boiler had to be often exposed to view. We do not think any boiler where the products of combustion are not passed round the outside of the boiler has a chance in competition with those boilers which are completely surrounded with a flue; we were not, therefore, surprised that this boiler was not mentioned by the Judges. But for a boiler to stand complete by itself, without any masonry or other fittings being required, we think it worthy of very honourable mention; and as the shelves are so contrived as to extract a great portion of heat from the smoke, we think it would economise the greatest portion of the heat. Fig. 5 represents Green's duplicate boiler, two boilers so connected that they can be worked conjointly or separately.

Stand No. 56, Messrs. Hartley & Sugden, Atlas Works, Halifax, exhibited several forms of boilers—-independent tank boilers, independent dome-top, saddle, and conical boilers—called independent because, like the one last mentioned, they require no brick-setting. They also exhibited a wrought welded saddle boiler, with check-back and extended water-way, which obtained the gold medal in competition. This boiler (fig. 6) has an aperture left in the back through which the smoke passes, and is conducted by means of midfeathers on the exterior of the boiler, so as to pass round the whole of the surface before it ascends the chimney. The setting of the boiler is very good, and the extended water-way a very valuable means of extracting heat from the fuel, which rests on it at the farther end, and which is, consequently, prevented from being too rapidly consumed, as it is beyond the draught from the firebars. We have little doubt that this is a very simply-constructed, efficient, and economical boiler, and from its obtaining the gold medal at Birmingham it has confirmed our previous impression that there was hardly any better boiler than a well-set saddle, though, of course, the check-end and extended water-way add much to its efficiency. The patent independent dome-top boiler is a decided



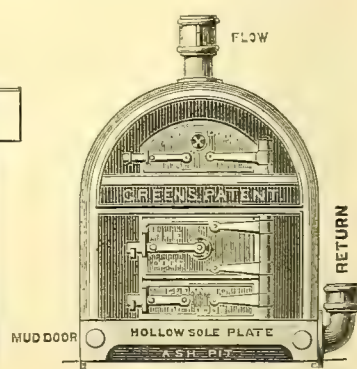
CROSS SECTION.

Fig. 2.



LONGITUDINAL SECTION

Fig. 3.



FRONT ELEVATION

Fig. 4.

high, and has two water-shelves, placed one above another, round which the flames have to pass. It is also fitted with a sole plate, and has two upright tubes at the further end of the firebox, connecting the lower sole plate with the bottom water-

improvement on the conical, having the flow-pipe on the highest point, and it is fitted with a flue-feeder with sand rim. This, like Green's boiler, which we have previously mentioned, would be very suitable for erection in any place where the boiler is often seen, or where there is no room laterally for brickwork.

In the next stand the North Staffordshire Engineering Company exhibited some of Stevens's Trentham Improved Cornish boilers. These are modifications of the old Cornish boiler, which will be well known to most of your readers. Their chief objection is their length, but the principle on which they are constructed is good.

Stand No. 58 was occupied by Mr. Henry Ormson, of Chelsea, who has been so long known for the efficiency of his boilers. He showed two forms of convoluted boiler, and a flued Cornish boiler. The convoluted boiler, of which we give a drawing (fig. 7), has the external form of a large saddle boiler; it has, however, as the drawing shows, an interior wrought-iron water-way, somewhat of the form of a letter H laid on one side, and the interior of the saddle boiler has convoluted hollow gills, which fit into or between the spaces of the internal boiler. The fire passes all round the internal water-way, and through a series of small holes left in the upper part of the saddle boiler. In setting the boiler the four corners are elevated about 3 inches on small fire-lumps, so that part of the fire on each side the boiler is deviated to the external surface of the boiler, so that every part of the boiler is exposed to the direct action of the ignited fuel. This is a very powerful boiler, with free circulation, and being made of wrought iron, is not liable to fracture from uneven expansion.

Stand No. 58a was occupied by Mr. Wright, of Birmingham,

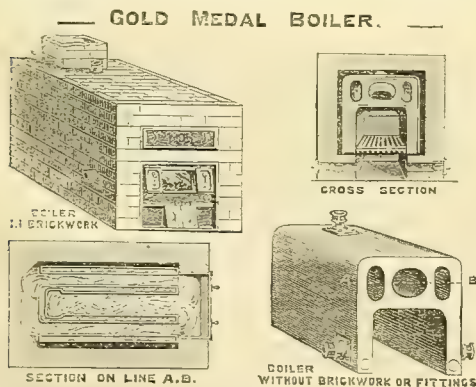


Fig. 6.

shelf. The outside of the boiler is covered with hair, felt, or other non-conducting material, and encased with wood. The boiler has a very neat and finished appearance, and would be very suitable for any situation where space was a desideratum,

with some small hot-water apparatus not requiring any observation.

This concludes our notice of the boilers exhibited at Birmingham, and which formed a very interesting collection. We can-

not conclude, however, without an expression of thanks to the Local Committee at Birmingham for their endeavours to give the public the benefit of a trial of boilers, in order that by practical test something more might be known of the relative

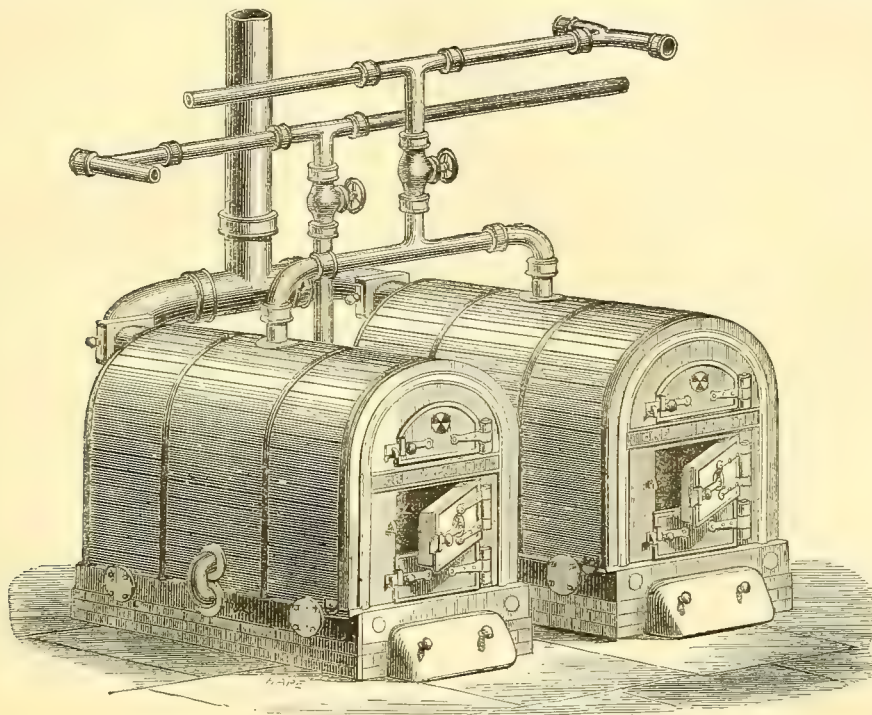


Fig. 5.

value of boilers, not only in an economical point of view, but in a practical one with regard to circulation, and we again regret

trial of boilers next year at South Kensington, where the trial could be conducted under more favourable conditions, and where, perhaps, other boiler-makers who have hitherto refrained from competition might be represented, as not only were there many boilers at Birmingham not competing, but there are several other good forms of boilers, as Machin's twin boiler, Foster's, described in the pages of the Journal some time ago (vol. xvii., page 9), and Jones's double L, the latter of which, for its size and price, is one of the best boilers in our opinion of any.

Where, however, there are so many good boilers it is difficult, without an extended trial, to say which are the best; but among upright tubulars we should choose Clarke's, among horizontal tubulars Dennis's, and among tank, saddles, and modifications we should take the Whitley Court flued saddle, Mee's double saddle, Ormson's convoluted, and Hartley & Sugden's saddle with extended water-way.

The much-vexed question of the relative value of cast or wrought iron greatly depends on the quality of the water employed, as well as on the iron which is used for casting, and cannot be decided by the dictum of any boiler-maker. Soft water ought always to be used where it is available, but with wrought-iron boilers it is not a bad thing to use hard water for the first few months, which helps to form an inside crust on the iron and prevents corrosion, soft water being used afterwards, so as not to allow the return-pipes to be encrusted up too much. Of this much we are certain, that the motive power, as we have before said, in boilers is so weak that nothing ought to be allowed to interfere unduly with circulation, which is the first essential test of the value of a boiler.

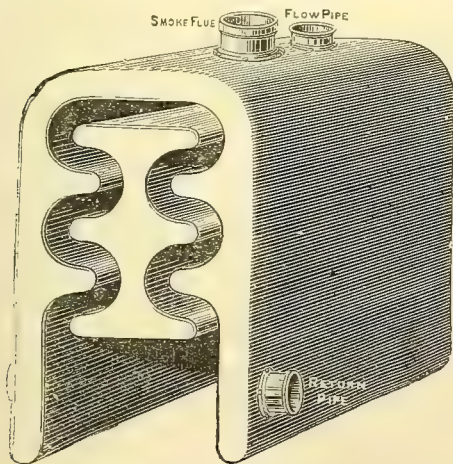


Fig. 7.

that the conduct of the Judges was impugned. We hope the Council of the Royal Horticultural Society will undertake a

ROYAL HORTICULTURAL SOCIETY—Nov. 6TH.

THE Exhibition on this occasion took everyone by surprise. The floral department was well represented for the season, and despite all that has been said of the scarcity of fruit, and great and grievous we know it is, there was such a show both in the Society's classes and more particularly in the associated International competition, as, taking the two together, has been rarely equalled. The quality for a season in which the out-door fruit crop has been almost a failure throughout the length and breadth of the land was something marvellous, and no marvel, then, that the Show, held in the conservatory, was crowded to

excess, and had it but lasted another day it would, doubtless, have been visited by thousands more.

Chrysanthemums were not so good as usual; there were a few very good cut blooms, but the quality of those on the pot plants was below the usual standard. In Class 1, six large-flowered, the first prize went to Messrs. S. Dixon & Co., Amhurst Road, Hackney, for exceedingly well-grown specimens of Prince of Wales, Annie Salter, Mrs. Rundle, Lady Hardinge, Dr. Sharpe, and Bernard Palissy. Mr. E. Rowe, gardener to Mrs. Lewis, The Rookery, Roehampton, was second. For six Pompons,

Mr. Rowe was first with Antonius, Cedo Nulli, Golden Cedo Nulli, Aurore Boréale, Duruflet, and Salomon. Messrs. Dixon were second; and Mr. W. Whittaker, gardener to S. Williams, Esq., The Laurels, Putney, third.

Class 3, twenty-four cut blooms, large-flowered, Mr. Rowe was first. Mr. Woodham, The Bower, Havering, was second.

Class 4, twelve cut blooms, Mr. Rowe was first; Mr. Douglas, gardener to F. Whitbourn, Esq., Loxford Hall, Ilford, second; and Mr. Berry, Roehampton, third. An extra award was made to Mr. J. H. Hinnell, gardener to F. Davis, Esq., Surbiton, for some very fine cut blooms of the Japanese varieties; The Daimio, Bronze Dragon, Oracle, and Red Dragon were very fine.

In Class 6, nine decorative plants bearing berries or ornamental fruits, Mr. George, gardener to Miss Nicholson, Putney Heath, was first with a very nice lot of plants, consisting of *Pernettya mucronata* and *speciosa*, *Skimmia japonica*, *Ardisia crenulata*, *Aucubas*, and different varieties of *Solanums*. Mr. Rowe was second with *Skimmia japonica* and *obolata*, a nice *Ardisia crenulata*, and others.

In Class 7, collection of Potatoes, Mr. J. Betteridge, The Common Hill, Chipping Norton, Oxon, was first with a collection of fifty-three sorts. The best amongst the kidneys were—the Ashleaf, Rivers's Royal Ashleaf, Lapstone, Jackson's White, Betteridge's Eclipse, a fine-looking red; Prince of Wales, and Sutton's Racehorse; of rounds—Early Handsworth, Model, Walker's Improved Regent, King of Potatoes, Bresee's Climax; and there was a good dish of the Fluke. Mr. R. Dean, seedsman of Ealing and Bedford, was second with a very even collection of fifty-one sorts, some of the rounds models in shape. Mr. P. McKinlay, Woodbine House, Beckenham, was third.

Messrs. Carter & Co. offered a prize for vegetables, which was awarded to Mr. W. G. Pragnell, gardener to D. W. Digby, Esq., Castle Gardens, Sherborne. Carter's Brussels Sprouts and Carter's Dwarf Mammoth Cauliflower were particularly fine.

In Class 8, Dessert Pears, six dishes, Mr. W. Fowler, gardener to Sir H. Mildmay, Bart., Dogmersfield Park, Winchester, Hants, was first with magnificent examples of *Duchesse d'Angoulême*, *Hacón's Incomparable*, *Beurré Clairgeau*, *Flemish Beauty*, *Glou Morceau*, and *Léon le Clerc* (Van Mons). Mr. P. F. Le Sueur was second, also with fine examples. Mr. G. Mills, gardener to Lord Carrington, Wycombe Abbey, Bucks, was third.

One of the best features in this Exhibition was a grand collection of choice Orchids contributed by the Messrs. Veitch, of Chelsea, consisting of the rare *Oncidium Rogersii*—we counted one hundred expanded flowers on its magnificent branched spike; and *Vanda cœrulea* with four spikes.

FRUIT COMMITTEE.—G. F. Wilson, Esq., F.R.S., in the chair. Major T. Clarke was awarded a special commendation for a brace of remarkably well-grown Telegraph Cucumber; and Mr. Gilbert, of Burghley Gardens, sent a brace of Selected Telegraph. Mr. R. Dean, of Ealing, sent roots of Californian White Radish. He also sent a Turnip called Cestrian Golden Stone Turnip, which was recognised as the old Golden Ball. Mr. Mitchell, gardener to Lord Wenlock, Escrick Park, sent Veitch's Autumn Giant Cauliflower, showing fine large white heads. Mr. Miller, Sherborne, Dorset, sent a Potato called Lady Paget, which was to be tried in the garden. Mr. Temple, Packington Gardens, Aylesford, sent a large Pumpkin called Tong Qua, 2½ feet long, and 2 feet 10½ inches in circumference in the thickest part, and as a curiosity it was awarded a cultural commendation. Mr. Edmonds, of Chiswick House, sent a large Pumpkin imported from New Zealand, which the natives use either raw or cooked. It is a variety of *Potiron Jaune*. Mr. C. Lidgard, of Hammer-smith, sent a collection of five varieties of Celery.

Mr. Sweeting, gardener to T. Y. Venn, Esq., Sneyd Park, Bristol, sent a seedling Black Muscat, a long tapering bunch similar to that of Mrs. Pince, well set. The berries are medium-sized and black, and covered with a thin bloom. The flesh is very firm and crackling, with a sugary rich flavour, and with a faint trace of muscat. The Committee unanimously commended the Grape, and requested to see it again.

Mr. Pearson, of Chilwell, sent two bunches of Chilwell Alicante, a new seedling raised by himself. The bunches are very large and shouldered, much larger than those of the old Alicante, remarkably well set, and of handsome shape. The berries are medium-sized, oval, and of a dark mahogany colour. The Committee were of opinion that the Grape was not sufficiently ripened. It was grown in a span-roofed *Pelargonium* house, and received no especial Grape cultivation. The Committee decided that it be seen again. The following report was read by Mr. Barron—

"At Mr. Pearson's request I visited Chilwell, and have to report to the Committee on the seedling Grape now exhibited as follows:—

"The Vine, a young seedling plant about three years old, is growing on the north side of a large span-roofed house along with several other seedling Vines, and examples of Lady Downe's, Madresfield Court, Gros Guillaume, Mrs. Pince, Alicante, &c. The body of the house was filled with *Pelargoniums* and other bedding plants, consequently not very beneficial to the keeping of Grapes in good condition.

"The crop on the plant consisted of seven bunches of about similar size to

those exhibited, being large and broadly shouldered, and in appearance, as to size and form of berry, it greatly resembles the Muscat Hamburg. The plant resembles Mrs. Pince, having the same deeply cut foliage and vigorous constitution as that variety.

"Although growing in a north border and north aspect the plant presented a fully more fruitful and handsome appearance than either of the other varieties named, which had the advantage of much better positions in the south border.

"I should consider it infinitely superior to the Alicante, and having the same free-fruited good-keeping qualities.—A. F. BARRON, Secretary."

Mr. Pearson also showed another seedling from Alicante, a long, narrow, tapering bunch, with long, narrow, oval berries. The skin is thick, of a deep amber colour. The berry-stalks are very stout. Flesh crackling, richly flavoured, and with somewhat of the Ferdinand Lesseps flavour. Mr. Tillery, of Welbeck, sent a bunch of Grapes with large white berries closely resembling the Golden Champion, and was considered by some to be identical with it. W. E. Essington, Esq., of Ribblesford House, Bewdley, sent a dish of Autumn Josephine Pear, but the flavour was not good enough. Mr. Tillery also sent a dish of fine large fruit of Grosse Calebasse Pear, and Calville Blanche Apple. Mr. Hill, of Keele Hall, sent a dish of the Styrian Pear, a variety which attains great perfection in Staffordshire. The fruit in this instance was rather past. Mr. H. Hooper, Vine Nursery, Widcombe Hill, Bath, sent a dish of Chaumontel Pears. Mr. I. Islepe, Stamford, sent a seedling Apple raised from Ribston Pippin, a small conical-shaped fruit, covered with broken stripes of crimson; but it was not approved by the Committee.

Mr. Ross, of Welford Park Gardens, Newbury, sent a seedling Apple, called Welford Park, of a round and rather flattened shape, beautifully coloured, and with the flavour and flesh of Blenheim Pippin. It was awarded a first-class certificate. Mr. Piccirillo, of Wigmore Street, sent an Italian Apple, called Mela Gelate. It is a small or medium-sized oblate fruit, with a green skin and a remarkably transparent flesh, having the appearance of gelatine. Mr. R. Westcott, Raby Castle Gardens, sent a new red-fleshed Melon, called Raby Hybrid, which is a very excellently-flavoured fruit for this late period of the season. Mr. Davidson, The Gardens, Sandon Hall, sent a very fine fruit of *Passiflora macrocarpa*, and another of less size was received from Mr. D. Cunningham, Moor Park. Each received a cultural commendation.

FLORAL COMMITTEE.—Mr. J. Fraser in the chair. The display of novelties on this occasion was rather limited. Messrs. Veitch had first-class certificates for *Maranta olivaris* and *Dracæna imperialis*; the former beautifully marked, and the latter decidedly one of the most splendid of ornamental-foliaged plants, with red, white, and bronze-coloured foliage, and moreover very handsome in character of growth. Mr. Bull was also awarded first-class certificates for *Dracæna imperialis*, as well as for *Maranta Makoyana*, dark green, with light green markings; *Mesospiridium vulcanicum*, an Orchid to the beauty of whose rosy purple flowers we have referred to in another column; for *Malortia simplex*, and for *Calamagrostis obovatus*. Messrs. E. G. Henderson also received a first-class certificate for *Maranta olivaris*, before referred to, for *Rhopala magnifica*, and *Coleus Crown Jewel*, a singularly handsome rich-coloured variety.

Mr. Wiggins, gardener to W. Beck, Esq., Isleworth, sent a collection of *Cyclamens* with beautifully-marked foliage, likewise one of the same plant in flower; Mr. Blackley, Leyton, Perpetual Tree Carnations of three kinds, with white flowers, named Lady G. Lennox, La Belle, and Lady E. Campbell, and which were stated to be very free-flowering. From Mr. Cannell, Woolwich, came cut blooms of *Geranium Master Christine*, which has before received a certificate, and is unquestionably a very fine variety; also Payne's Perpetual, a remarkably dwarf free-flowering scarlet. From Mr. Rowe, gardener to Mrs. Lewis, Roehampton, came *Chrysanthemum White Venus*, a sport from *Venus*, a flower of excellent quality; also Elaine, a Japanese kind, with very large flowers, quite 5 inches in diameter, pure white, and with the extremities of the florets notched, so that, viewed as a whole, the flower has the appearance of being fringed. For this a first-class certificate was awarded. Mr. Fairbairn, gardener to W. Terry, Esq., Peterborough House, Fulham, sent *Oncidium serratum*, which has before been certificated. Mr. Croucher, gardener to J. Peacock, Esq., Sudbury House, Hammersmith, had first-class certificates for *Yucca Eylesii*, a very handsome plant with pale green leaves, those at the lower portion of the head drooping, the others erect or nearly so; for *Pilocereus Peacockii*, *P. Hoppenstedtii*, *Mammillaria Peacockii*, and *Gasteria Peacockii*.

INTERNATIONAL FRUIT SHOW.

THE show of Grapes was very extensive, and in the single dishes the quality was very good. In Class 1, the most complete collection, two bunches of each, Messrs. H. Lane & Son, of Great Berkhamstead, were as usual in the first position. They exhibited the following varieties—Muscat of Alexandria and

Bowwood Muscat, large in berry and of a fine amber colour; Trebbiano, Foster's White Seeding, Duchess of Buccleuch, Lady Downe's, Gros Guillaume, Esperione, Frankenthal, Black Prince, Muscat Hamburg, Alicante, Royal Ascot, and Mill Hill Hamburg. Mr. A. Donaldson, gardener to the Right Hon. Lord Chesham, Latimers, Chesham, was second with a good collection; it contained two handsome bunches of Gros Guillaume, Mrs. Pince's Muscat, and others. Two other collections were shown. In baskets of Grapes weighing not less than 12 lbs., all the prizes went to Muscat of Alexandria; Messrs. Lane were first, Mr. G. Ward, gardener to T. N. Miller, Esq., Bishop Stortford, was second, and Mr. W. Cole third, an extra award being made to Mr. G. Morrison, gardener to Lord Wolverton, Stanmore Park, Middlesex. Messrs. Lane were first with splendid Muscat of Alexandria in the class for that variety. Mr. W. Cole, gardener to J. S. Budgett, Esq., Ealing Park, W., was a very good second; Mr. F. Deuxberry, Cobham Hall, Gravesend, being placed third. In class 4, the best dish of Black Hamburg, only two dishes were exhibited. Mr. P. F. Le Sieur, Grand Vale Vineries, Jersey, was first, and Mr. C. Davis, gardener to E. Rosher, Esq., 23, Upper Hamilton Terrace, was second; Mr. E. Morris, gardener to H. T. Salmon, Esq., Gayton House, Northampton, third. Class 6, any other variety of Black Grapes, single dish.—Mr. W. Toomer, gardener to W. Knowles, Esq., Ribblesdale, Leigham Court Road, Streatham, was first with three handsome bunches of Alicante covered with a beautiful bloom. Mr. G. Silcock, gardener to Sir C. W. Shakerley, Bart., Somerford Park, Cheshire, was second with very large bunches of the same variety, with the bloom a little rubbed; Mr. J. Neighbour, Bickley Park, Bromley, being placed third. Some exceedingly fine Mrs. Pince and Gros Colman were exhibited in this class. Class 7, White Grapes, except Muscat and Frontignan.—Mr. G. Silcock was first with three immense bunches of Trebbiano, weighing in the aggregate 18 lbs.; Mr. A. Donaldson was second, and Mr. W. Toomer third. An excellent dish of Muscat of Alexandria and one of Alicante came from Mr. Wattam, gardener to C. Longman, Esq., Shendish, Hemel Hempstead, but unfortunately they were not entered previously, and therefore could not compete.

Class 8 was for the most complete collection of Dessert Apples. Mr. John Scott, nurserymen, Merriott, Somerset, sent ninety-eight dishes; Mr. Drieu, St. James's Garden, Belvedere, Jersey, sent thirty-two kinds, many of them excellent specimens. From Mr. G. Thomas, 45, Don Street, Jersey, came also thirty-two kinds; and from Mr. W. O. Ward, Ramsey, Harwich, forty sorts. The Fruit-Growers' Association, Halifax, Nova Scotia, likewise sent the same number, and, taken on the whole, in excellent condition. R. Webb, Esq., Calcot, Reading, exhibited 104 dishes, and Mr. F. Rutland, gardener to the Duke of Richmond, Goodwood Park, seventy-one varieties. Mr. Webb was first, Mr. Scott second.

The next class, 9, was for the best twelve dishes of Dessert Apples; fifteen collections were shown. Mr. T. Jones, Royal Gardens, Frogmore, was first with fine specimens of Blenheim Pippin, Claygate Pearmain, Nugget, Court of Wick, Small's Imperial, Princess Augusta, a late-keeping variety, Court-pendu-plat, King of the Pippins, Small's Admirable, Scarlet Russet, Fearn's Pippin, and Windsor Castle, a handsome new Apple. Mr. Jones, gardener to E. Purser, Esq., Wallington Bridge, Carshalton, was second; and Mr. Thomas, Jersey, third, with a collection including fine specimens of Royal Russet, Beauty of Kent, and King of the Pippins. Very finely coloured specimens came from Mr. Gardiner and Mr. Pluck.

Class 10 was for the best dish of Cox's Orange Pippin. The examples from Mr. F. Dancer, Little Sutton, Chiswick, were very large and fine. Mr. Gardiner, gardener to E. P. Shirley, Esq., sent good examples of the same kind, as also did Mr. Cole, gardener to J. S. Budgett, Esq., Ealing Park; Mr. G. Ward, gardener to T. N. Miller, Esq., Bishop Stortford; and Mr. J. Read, Northwich. Mr. Dancer was first, Mr. Cole and Mr. Ward taking the other prizes.

The prize for the best dish of Golden Pippin was awarded to Mr. F. Rutland, gardener to the Duke of Richmond, for specimens grown on a south wall; these were so large that many had doubts whether they were actually the sort or not, but they proved to be correct. Mr. T. Farrow, gardener to G. Batters, Esq., was second, and Mr. Earley, Valentines, third.

For the best dish of Ribston Pippin, very fine specimens from Mr. Rutland were first. Large fruit, but not so highly coloured, from Mr. Dean, seedsman, Ealing, were second; and Mr. E. Clarke, gardener to J. R. Hall, Esq., The Grange, Sutton, Surrey, was third with excellent specimens.

For Adams's Pearmain Mr. Rutland was again first with large splendidly-coloured specimens, Mr. Drewett, gardener to Mrs. Cubitt, second; and Mr. Gardiner third.

Golden Reinette, large and beautifully coloured, came from Mr. Stephenson, gardener to F. C. Barker, Esq., Leigh Hill, Essex, and well deserved the place of honour. Mr. Rutland was second; R. Webb, Esq., third.

For Nonpareil, Mr. Drewett, Mr. Dancer, and Mr. Broadbridge,

Walton Gardens, Warwick, were the prizetakers, the fruit in each case being excellent.

In collections of Culinary Apples, Mr. G. Thomas, 45, Don Street, Jersey, was first with a collection of thirty-six sorts, the most noticeable being Belle des Bois, Green Pippin, Beauty of Devon, Alfriston, Emperor Alexander, Windsor, Yellow Reinette, Restorick, Reinette of Canterbury, and Reinette du Canada. Mr. S. Ford, gardener to W. E. Hubbard, Esq., Leonardale, Horsham, Sussex, was second, and Mr. R. Webb, Calcot, Reading, third. A very fine collection of culinary Apples was sent from the Fruit-Growers' Association, Nova Scotia, and would, no doubt, have occupied a position on the prize list had they not been bruised very much in transit.

Dumelow's Seeding, that most popular of Kitchen Apples in our markets, was exceedingly well represented, there being many very fine dishes; Mr. Dancer was first with very large finely-coloured specimens, Mr. Gardiner and Mr. Drewett being respectively second and third.

Alfriston was generally very fine; the first prize went to a dish weighing 5 lbs. 15 ozs. from Mr. Pluck, Jersey; the second to Mr. C. J. Perry, and the third to Mr. Drieu. Mr. Gardiner, Mr. Rowe, and Mr. Craddock also sent large fruits.

Emperor Alexander, beautifully coloured and very large, came from Mr. C. J. Perry, Mr. Thomas, and Mr. Drieu, as well as from Mr. Moffat, the first three being the prizetakers.

Of Gloria Mundi but few dishes were shown; the best came from Mr. C. J. Perry, Mr. Frisby, and Mr. Dancer. For Bedfordshire Foundling no prizes were awarded.

For Yorkshire Greening Mr. J. Neighbour, Bickley Park, was first with very good examples. Mr. Mortimer, Wallington Bridge, was second, Mr. Gardiner third.

The heaviest six fruit of any variety were Alfriston, 6 lbs. 8 ozs., from Mr. Pluck; second came Mr. Gardiner with Warner's King, very fine. Mr. Dancer showed Dumelow's Seeding, weighing 3 lbs. 10 ozs.

The collections of Dessert Pears shown in Class 24 were a little exhibition of themselves. Mr. Thomas, Jersey, was first with large and splendid specimens of Beurré Bachelier, Forelle, Beurré Clairgeau, Chaumontel, Colmar d'Arenberg, Duchesse d'Angoulême, and many others scarcely less fine. The second prize went to Mr. Drieu for a collection in which Beurré Clairgeau and Triomphe de Jodoigne were specially noticeable among the large specimens exhibited.

Class 25 was for the best dish of Conseiller de la Cœur. Messrs. E. P. Francis & Co., nurserymen, Hertford, were first with very large and fine specimens; Mr. G. Thomas, 45, Don Street, Jersey, was second with excellently-ripened fruit, and Mr. T. Jones, Royal Gardens, Frogmore, third. G. F. Wilson, Esq., sent specimens from pot trees equalling any shown.

The best dish of Doyenné du Comice came from Mr. F. Drieu, Belvedere, Jersey. These were very large and fine, and closely pressing on them were the fruit from Mr. C. J. Perry, Castle Bromwich, who was second; Mr. J. Pluck, Jersey, being third.

Duchesse d'Angoulême was shown in splendid condition, especially by the Jerseymen, who carried all before them. Mr. Le Sueur, Grande Vale Nurseries, Jersey, was first with large beautifully-ripened specimens; Mr. G. Thomas, second, with fruit closely approaching in size; and Mr. Pluck, third. Mr. Drieu; Mr. Carmichael, gardener to His Royal Highness the Prince of Wales, Sandringham; Mr. Deuxberry, Cobham Hall, Gravesend, and others, exhibited excellent fruit.

Marie Louise was very numerously shown, and almost without exception very fine. R. Webb, Esq., Calcot, was first; Mr. A. Hankins, Ashcott House, Bath, second; and Mr. Thomas, third.

Glou Morceau, very large and fine, from Mr. C. Ross, gardener to C. Eyre, Esq., Welford Park, Newbury, was first in the class for that Pear; the second prize going to Mr. J. Neighbour, Bickley Park, Bromley; and the third to Mr. A. Moffat, gardener to H. Allsopp, Esq., Hindlip Hall, Worcester. By other exhibitors very fine specimens were also shown.

For Passe Colmar, the first prize went to Mr. Jones, gardener to Her Majesty at Frogmore; the second to Mr. Miles, gardener to Lord Carrington, Wycombe Abbey; and the third to Mr. J. Drewett, gardener to Mrs. Cubitt, Denbies.

Of Catillac immense specimens were shown. The first prize was taken by Mr. C. Tivey, gardener to P. Gassett, Esq., St. Saviour's, Jersey. Mr. Pluck, Jersey, was second, the dish weighing 8 lbs. 1 oz.; third came Mr. Drieu.

The best dish of Uvedale's St. Germain came from Mr. Le Sueur, Jersey; the second from Mr. Pluck—these weighed 9 lbs. 9 ozs.; the third from Mr. J. J. Jacobs, Belgium. Mr. Hankins, Mr. Drieu, Mr. Thomas, and Mr. Lumsden, Bloxholm Hall, also sent large specimens.

In the class for the heaviest six fruit of any variety, Uvedale's St. Germain weighing 13 lbs. 1 oz. from Mr. Thomas, Jersey, was first; the same kind very finely coloured from Mr. J. Scott, Merriott, second; and from Mr. Drieu third. Catillac, weighing 7 lbs., was shown by Mr. Pluck; Grosse Calebasse, weighing 6½ lbs., came from Mr. Harvey, gardener to P. Wroughton, Esq., Woolley Park, Wantage—these were very fine—and beautiful

specimens of Beurré Clairgeau from Mr. O. Goldsmith, gardener to Sir W. Farquhar, Polesden, Dorking.

In the Miscellaneous class there were some fine collections of Pine Apples. Mr. G. Ward sent six excellent Smooth-leaved Cayennes and Charlotte Rothschild; Mr. Rochford, Page Green, Tottenham, a magnificent Charlotte Rothschild. Four fine Black Jamaicas came from Mr. Deville, Wooton Hall, Ashbourne. Mr. Jones, of the Royal Gardens, Frogmore, Mr. Benham, and others, were contributors of Pines.

THE EARLIEST OF ALL PEAS.

LAXTON'S HARBINGER.

Among the hybridising feats which Mr. Laxton has been successful in effecting, one of the most useful, and in a commercial point of view one of the most valuable, is the production of the earliest variety of garden Pea. The value of earliness commercially is not always taken into account in estimating early varieties of Peas; but it must be borne in



Harbinger.

mind how great the gain is to the gardener who can in the season be first in market with his early Peas, if it be but three days before his rivals; even these three days may be of incalculable advantage to him. It was long thought that it was hardly possible to raise a Pea which would surpass Dillistone's Early in the rapidity with which it attained maturity. With the exception of the inferior Early Kent, no other has ever rivalled that variety in this respect; but that which has now stolen the laurels it has long and honourably worn, is one which not only possesses earliness as its merit, but quality and colour also.

HARBINGER is a blue Pea raised between Dillistone's Early and Laxton's Alpha. Its habit of growth is similar to that of Dillistone's, and its height is from 2½ to 3 feet. The stem is simple, producing from seven to eight pods, which are single, 2½ inches long, full, plump, and rounded, with a slight curve, and of a light green colour. They are very tightly filled with about six ordinary-sized Peas of a fine colour and good flavour. The ripe seed is small, round, and light blue.

The seed was sown on the 23rd of February, the first flowers appeared on the 9th of May, and it was in full flower on the 15th. The slat appeared on the 21st, and it was fit for use on

the 6th of June, being three days earlier than Dillistone's, and six days earlier than Sangster's No. 1.

The Fruit Committee of the Royal Horticultural Society deservedly awarded it a first-class certificate.

THE LARGEST OF ALL PEAS.

LAXTON'S SUPERLATIVE.

MR. LAXTON has been equally fortunate in raising the largest as he has the earliest of all Peas. It is not unlikely that he may live to reap the honour of having produced the best of all. There is nothing of this kind impossible in the hands of people



Superlative.

who, like Mr. Laxton, make brains the groundwork of their operations. The success that has attended him in this branch of gardening is greater than that which has accompanied any other who has laboured in the same field, not even excepting that ardent Pea lover, the late Dr. Maclean, of Colchester. This success is due to good reasoning carried out to a successful issue; for all Mr. Laxton's Peas are cross-breeds—cross-bred with a design which has almost always been attained. These Peas are not results of selection taken here and there from an ordinary crop when a disposition to vary has been observed, and the truant secured, but are the produce of crosses made and carried out with great perseverance and patient labour.

This SUPERLATIVE, the largest of all Peas, is a cross between Ne Plus Ultra and a hybrid of Supreme. The plant is an ex-

ceedingly strong and robust grower, having a stout, succulent stem from 7 to 8 feet high, with large, broad, pale green foliage, generally simple, and bearing from fourteen to sixteen pods, which are generally in pairs. The pods are very large, sometimes as much as 7 inches long, pale green, broad and somewhat irregular in form, much curved and pointed, containing from seven to nine large peas of a pale green colour, and no

particular flavour. The dry seed is flattish and parti-coloured. The seed was sown on the 23rd of February, and the first flowers appeared on the 30th of May. The plants were in full bloom on the 5th of June, the slats appeared on the 10th, and the Peas were fit for use on the 26th of June.

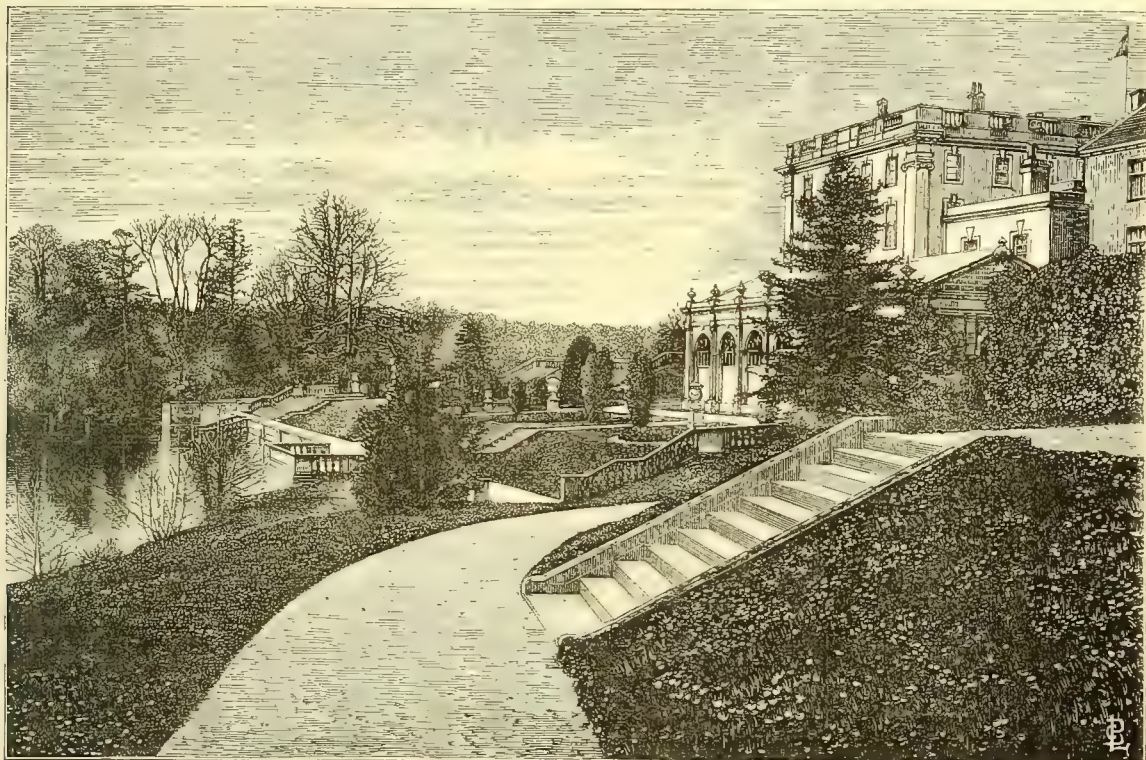
This wonderful variety was awarded a first-class certificate by the Fruit Committee of the Royal Horticultural Society.

STONELEIGH ABBEY, THE RESIDENCE OF LORD LEIGH.

(Concluded from page 348)

STONELEIGH ABBEY was most anciently called Stoneley or Stanley-in-Arden Priory, and was here established in 1154 by Henry II. Its tenants were Cistercian Monks. The Priory was suppressed in the year 1536, being the 27th of Henry VIII.,

and he granted it in fee three years after to his favourite, Charles Brandon, Duke of Suffolk. From him it passed to his sons, who dying childless it was inherited by the Cavendishes, by whom it was sold to Sir Rowland Hill and Sir Thomas



Stoneleigh Abbey.

Leigh, London aldermen. On dividing their joint purchases Stoneleigh was taken by the last-named, and, with other neighbouring lands, was confirmed to him by patent in the fourth year of Queen Elizabeth. Large and many were his and his descendants' charities, fully set forth by Dugdale, and even an epitaph on the monument of the Stoneleigh Abbey porter tells the same, for it concludes with—

"If markets rise, rail not against their rates,
The price is still the same at Stoneleigh gates."

In previous centuries the lords of the manor may have been charitable too, but at harvest time their inferior tenants had rather a hard time of it, for so soon as the lord of the manor gave them notice they were obliged to be reaping for him from sunrise to sunset, "not sitting down to breakfast, but each eating what he brought with him as they worked, and after breakfast they might sit down once before dinner, the lord finding them drink, but at noon they were to have meat and drink provided by the lord, everyone having a little wheat loaf, four eggs and pottage—namely, grewell without flesh boiled in it."

Much of the mansion erected soon after the dissolution of the abbey remains, but the front and other chief portions of the present residence are of freestone, erected about the year 1760 by Edward, Lord Leigh, the plans being furnished by Mr. Smith, architect, Warwick. Other alterations and im-

provements have been made subsequently, and of the ancient Cistercian Abbey, with the exception of the vaults, there are but few remains.

THE Avon flows so near the mansion that the intervening space is all required for a geometrical flower garden. At this place I think the river has been somewhat widened, and possibly dammed back, for a little lower down a waterfall is formed; but instead of being prominently brought into view, it is in a great measure concealed by an island of Rhododendrons in robust health, yet its murmuring is heard from the principal walks, and it may be reached by pursuing a circuitous path. The whole place is lovely. The mansion occupies a slightly elevated position, having its carriage entrance to the north; an ornamental balustrading forms the boundary between the park and the pleasure ground to the west; while to the south the river forms a natural and effective margin. The kitchen garden is to the east of the mansion, but separated from it by shrubs and trees, while to the south of the kitchen garden are pleasure grounds extending considerably to the eastward. Trees and shrubs, with well-kept walks, extend along each side of the river much further than I had an opportunity of seeing, but enough came under my notice to justify my giving it the character of a very fine place.

I was next introduced into a flower garden, which an ever-

green hedge had before prevented my seeing, and there I was glad to find that the usual massing flowers were not the only subjects grown, for occupying conspicuous places amongst them were two specimens of Pampas Grass, I think the finest I ever saw. I estimated that more than 150 spikes of bloom would grace each of them, and I hardly expected to see them in so forward a condition in the first week of September as they then were, showing the neighbourhood is early as well as productive. The geometric beds formed an agreeable whole; there was an ample space of grass between them, and their occupants were the best varieties of the different flowers employed. A handsome conservatory near this garden was also well stocked with permanent plants, and would most likely be still more gay at a time when out-door plants were less tempting. Separated from the flower garden just referred to, was another large flower garden, also geometrical and on grass, facing the principal front of the mansion. Each bed was well filled with the most popular bedding plants, and the whole was in excellent keeping.

The accompanying view in the pleasure grounds, as well as that of the mansion, at page 347, are from photographs by Mr. F. C. Earl, 46, Broad Street, Worcester.

At Stoneleigh the kitchen garden is several acres in extent, and is enclosed with suitable walls well covered; against them I noticed some good Pears; and, I think, also Plums, but most of the latter had been gathered. Peaches, as at every other place that I have heard from, were scarce on the open walls, but under glass they were and had been abundant. Most vegetables seemed to thrive in it, and especially Asparagus, Celery, Lettuce, and Potatoes.

In the vineries were some good Grapes in various stages. The latest Grapes were just ripening, the others had been all cut, and abundance were awaiting their turn. Figs, which in comparatively few places can be depended on without the aid of glass, were here afforded that protection, the earliest crop being produced on pot trees. Melons and Cucumbers there were, of course, in abundance.

On the walls some very good Morello Cherries still remained, and, as before observed, good crops of Pears, but Apricots had been scarce. I did not need to inquire about the well-doing of Strawberries, for the huge plants, almost attaining the size of bushes, indicated that the adversities of the season and not they would be the cause of a failure if there happened to be one. Apples on trained trees were quite as plentiful as in the majority of places, and the appearance of the trees was all that could be desired. Currants and Gooseberries, I learned, had not been so good as in former years, owing to the severe frosts in April and May. Everything looked well in the garden, and reflected great credit on Mr. Elworthy, who has the management of it, and notwithstanding the rain which so encourages weeds, every place was clean and tidy; the crops, the walks, and the edgings being alike faultless.—J. ROBSON.

VIENNA EXHIBITION.

A MEETING was held at South Kensington yesterday, at which His Serene Highness the Duke of Teck presided, to consider what steps should be taken to secure a worthy representation of British horticulture at the approaching Great International Exhibition at Vienna. It was decided, as a preliminary course, that the leading nurserymen and amateurs should be invited to a meeting to be held on Wednesday next, at South Kensington, at two o'clock, to discuss this subject, and to promote, if possible, the desired object. Dr. Hogg was appointed to preside on the occasion, and to report to an adjourned meeting to be held early in December.

CALLS AT THE NURSERIES.

MR. WILLIAMS'S, VICTORIA NURSERY, HOLLOWAY.—The large conservatory, as heretofore, has for its leading features magnificent Tree Ferns, Palms, and Cycads, together with rich and valuable collections of Yuccas, Beaucarneas, Agaves, and Dasylirions, many of which are of great rarity. It may be noted that the stems of the two large Dicksonias which stand one on each side of the central walk measure 10 feet in height from the tub to the branching of the head, and 4 feet in circumference; while *Cyathea Cunninghamii* is 11 feet high from the pot's surface, and *C. Smithii* 8½ feet. Four noble plants of *Dracena indivisa*, which had grown too tall for the house, are in course of preparation for being lowered, pots filled with soil having been placed round the upper part of the stem, with

the view of taking off the tops when fairly rooted. Among the Cycads may be noted remarkably fine specimens of *Euphalarctos caffra*, *horrida*, and *latifrons*; the last, in particular, is supposed to be the largest in Europe. Among the *Dasylirions*, *longifolium*, with graceful drooping leaves, would be a handsome plant for a vase, and *D. plumosum* is another elegant species.

Passing next into a Palm and Fern house, we find there noble examples of *Cibotium princeps*, *Cyathea dealbata*, the scarce *C. MacArthurii*, and large stems of *Dicksonia antarctica*, fresh imported, and which have not yet broken. Among Palms we find large specimens of *Latania borbonica*, *Areca rubra*, and two magnificent plants of *Phoenixophorium sechellarum*, one of them with leaves as large as we ever remember seeing on this, certainly one of the grandest of tropical Palms, and which, with the nearly-resembling *Verschaffeltia splendida*, is not exceeded in majesty of port by any of its order. In another division are large plants of *Adiantum farleyense* in the finest possible condition, and which cedes to no member of the genus in beauty, beautiful as the others are. Among flowering plants we noted the pure white *Eucharis amazonica* in great beauty, and *Euphorbia splendens*, one of the most useful of winter-flowering stove plants. In a stove fernery adjoining, besides specimens of *Platynerium grande*, *Gleichenia flabellata*, and hosts of others, there are several new varieties of crested *Pterises* of the serrulata tribe; while in the New Holland house, in addition to the hybrid *Solanums*, which as berry-bearing plants have firmly established themselves as favourites for winter decoration, there are *Bouvardia jasmiflora*, white, and Hogarth, red, various winter and spring-flowering Heaths, and *Cyclamens* just coming in.

Orchids, with which Mr. Williams's name is inseparably associated, comprise nearly every known species of beauty, but the number in flower at present is not large. Foremost must be mentioned the new *Mesospidium vulcanicum*, with charming purplish rose-coloured flowers, *Sophranites grandiflora*, which for brilliancy of colour is not excelled among Orchids; whilst of others we noticed *Maxillaria venusta*, *Dendrobium nodosum*, *Odontoglossum navium*, *Calanthe Masuca*, *Vandas*, especially the lovely pale blue *cerulea*; *Pleione Wallichii*, *lagenaria*, and *maculata*, and *Miltonia Clowesii*.

A stove chiefly devoted to fine-foliaged plants contains a great variety of *Crotons*, including not only finely-coloured specimens of *C. pictum*, *variegatum*, and *angustifolium*, but *Veitchii*, *interruptum*, and indeed most of the new kinds. In the way of flowering plants there are *Ixora javanica* in full bloom, and other species of the same genus; and, reverting to foliage, *Dracenas* of all the older kinds, together with *Guilfoylei*, *reginae*, and other handsome novelties. *Livistonia rotundifolia* and *Calamus ciliaris* are noticeable as two handsome Palms, and there are many more elegant members of the same great order. Of Pitcher-plants, too, Mr. Williams has here a remarkably fine collection, for both to them and the equally curious North American *Sarracenas* he pays particular attention. *Marantas*, *Cyanophyllums*, *Sphærogynes*, and the *Ouvirandra fenestralis* we pass over, merely remarking that they are such as do credit to the high reputation of the Victoria Nursery for plant-growing.

In other houses there are fine stocks of Heaths, *Aphelexes*, *Pimeleas*, half-standard and pyramid, *Azaleas*, and *Camellias* in great abundance, from large bushes down to small plants, all in the healthiest possible condition, and profusely set with buds. Changing again to denizens of warmer climates, we have *Dipladenias*, the new *Ixoras* figured at page 213, *Gardenias*, *Clerodendrons*, and *Allamandas*, some in flower, some not; and lastly, in the Pine stove one of the best lots of Pines to be met with at any nursery we know.

MESSRS. CUTBUSH'S, HIGHGATE.—The name of this firm is so bound up with their splendid exhibitions of Hyacinths, Tulips, and other spring-flowering bulbs, that when people go to Highgate in the spring months they seldom go further than the house in which those grand spikes of Hyacinths and the multitudes of gay-coloured Tulips offer a striking contrast to the usually dreary aspect of out-door vegetation at the season they are in the height of their beauty. There are, notwithstanding, things to be seen then, as there are now, worthy of note outdoors as well as in-doors. The latter, however, we shall just glance at on our way to view the former. Among the contents of the show and other houses may be mentioned excellent stocks of *Cytisus racemosus* and *Attleeana*, the latter extremely useful for early spring flowering; winter-blooming Heaths, as *E. caffra*, *hyemalis*, and *persoluta*; *Epaerises*, *Azaleas*, *Gar-*

denias, Epiphyllums, young Palms suitable for table decoration, Ferns, Amaryllids, and numerous miscellaneous plants. Passing out of doors Mr. James Cutbush incidentally pointed out some frames of Mignonette—"On that spot," said he, "Mignonette has been grown for fifty-two years, and we have never missed a crop but once, and we always sow on August 31st or September 1st." But we have inadvertently somewhat anticipated—it ought to have been stated before that the grounds of the Highgate and Cholmeley Nursery, Finchley, a subsidiary establishment, altogether extend to fourteen acres, so it will be seen that Cutbush's is no mere bulb nursery, but one in which trees and shrubs, both fruit-producing and ornamental, can be grown in quantity.

Of Ivies there is a fine collection, in which we especially noticed the Silver Tree, with a broad white margin to the leaves; a fine golden tree variety of the Irish; *Caenwoodiana*, with small deeply-lobed leaves; *algeriensis* variegata, with fine white variegation; *Glymii*, beautifully marbled; *marginata* robusta, rose-edged; and *rhombica argenteo-marginata*, a quick grower. *Aucuba japonica aureo-maculata* deserves high and honourable mention as one of the boldest and most striking varieties of late years introduced into our gardens, so large and so rich in colour is the blotching in the centre of the leaf. Another very beautiful hardy variegated shrub is *Ligustrum lucidum variegatum*, which, for a Privet, has a very large leaf beautifully margined with yellow. Weigelas for forcing, Guelldres Roses, Deutzias, &c., are largely represented. Of Deodars and other Conifers there are many handsome specimens, and of other trees and shrubs there is a very choice collection. Among variegated hardy trees *Ulmus viminalis* variegata deserves especial mention on account of its beautiful white-variegated leaves, which the tree retains much later in autumn than *Acer Negundo* variegatum, though they are not produced so early in spring. There is also a very pretty Elm with golden-tipped leaves on the young growth. The Evergreen Oaks, of which there is a larger quarter plunged in pots, the trees averaging 5 feet high, are ready for immediate and safe transference to other quarters, as indeed they would be at any season. Laurels are extensively grown; among them, besides the common and Portugal, may be noted *Laurus caucasica*, and *colchica* with longer leaves than the preceding. There are many trees of the Western Plane growing on to form standards; such as are employed with such good effect on the Continent; and we must not omit to mention the *Populus tremula pendula*, one of the most graceful of all deciduous trees. Ordinary nursery stock we pass over; but of Hyacinths, whether they come under our notice or not at the spring exhibitions, we may be sure there will be a splendid array, for between three hundred and four hundred pots had been placed in that judicious seclusion which is so necessary for the production of roots, and, we need hardly say, those superb spikes of flowers which astonish all beholders, for it cannot be denied that if the Dutchmen grow the bulbs, we, at least, can make them flower better than they can.

NOTES AND GLEANINGS.

As we formerly anticipated, THE ROYAL HORTICULTURAL SOCIETY'S COUNTRY EXHIBITION for 1873 is to be held at the Park Farm, Bath—a most beautiful spot. The Mayor writes to say that the guarantee fund is complete, and from what we know of the Committee the affair is likely to be pushed on to a success.

In your Journal of the 24th ult. I see in a letter dated 21st, with reference to FIELD MUSHROOMS, "Singular it is that there has not been one field Mushroom seen in the north this year." This is incorrect, for I gathered in August of this year very fine ones. Some were 30 inches in circumference, and all were of good size.—W. H., *Swinbourne Castle, Northumberland*.

SOME enormous trees of the genus *EUCALYPTUS* have lately been found in Victoria and Western Australia. Several were measured and found to exceed 450 feet in height, and 40 feet in circumference. It seems, therefore, that Australia can boast of possessing the loftiest trees in the world. These trees, as well as those of the *Banksia* and *Acacia* kind, are admirably adapted to stand the long droughts which sometimes prevail here.

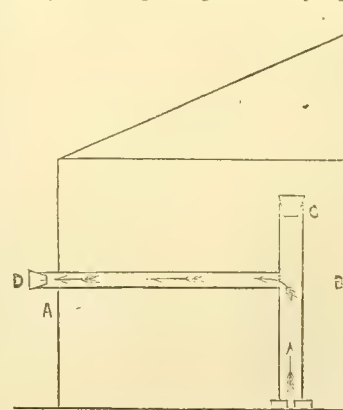
EVERY year the CHRYSANTHEMUMS IN THE TEMPLE GARDENS are a theme in everyone's mouth. They are always very good, but never have we seen them better than this year. Mr. Newton, the gardener of the Inner Temple, a most worthy successor to our good old friend Broome, has this year fairly

established a reputation of being a grower of blooms which, for size and quality, without "dressing" of any kind, have never been surpassed. That such a result has been secured by thorough good culture from first to last is evident by the healthily luxuriant character of the foliage. Prince Alfred, in particular, we have never seen larger nor more perfect—each floret laid as if by hand, and yet the blooms have never been touched. *Vesta*, *Empress of India*, *White Globe*, *General Slade*, *Mrs. George Rundle*, and *Little Harry* are also very fine, and among the Japanese kinds, which are rapidly rising in favour, *The Daimio*, *James Salter*, and *Hero of Magdala*. We may add that Mr. Newton has this year secured a display a fortnight earlier than most other growers. In the Inner Temple Mr. Dale, who is later, has *Frogne*, remarkable for its fine colour, *Little Harry*, *Vesta*, *White Globe*, and others excellent; and, though not connected with *Chrysanthemums*, no one could fail to remark the beauty of the long stretch of lawn extending towards the river. To its verdancy no doubt the moist autumn has greatly contributed, but we look upon the green sward of the two Temple Gardens, so gladdening to the eye, not only as a proof that the smoke nuisance is abating, but also as an evidence that gardening there, as elsewhere, can be successfully carried on under difficulties.

WE are informed that the Rev. H. Honeywood Dombrain ("D., Deal," of our contributors), is preparing for publication a series of TREATISES on the History, Culture, &c., of FLORISTS' FLOWERS. The first of the series, "*The Gladiolus*," will probably be published on the first day of next year.

WINTERING CUTTINGS.

At this season, when many are thinking how to keep their cuttings, perhaps an account of the means I used last winter may be useful. My greenhouse is on a humble scale; it is a lean-to, 10 feet long, 3 feet wide, and 5 feet 6 inches high. I fitted a stove pipe inside as follows:—There is an upright piece 4 inches in diameter, and 3 feet 6 inches long, in which is a joint at right angles to carry a pipe 2½ inches in diameter.



A B. Wall of greenhouse. The arrows show the direction of draught.

The upper part of the upright pipe is closed with a moveable plug; the lower end rests on two tiles placed about 2 inches apart to admit of draught. The end of the horizontal piece is partially closed when the fuel is well ignited. I burn charcoal at 3s. per sack, and light the stove at the bottom by dropping some lighted charcoal through the top of the upright pipe, then close the top and open the plug at the end of the horizontal pipe. The charcoal burns brightly in three or four minutes. I then fill up the upright pipe to the rectangular joint. The stove is thus self-feeding, and if supplied with small pieces of charcoal about the size of a walnut, will burn without attention for nine or ten hours. The plugs I find most convenient are flower-pots. For the plug marked c, I have a 48-sized pot half filled with plaster, and d is a 60-sized pot, through the hole of which all fumes escape into the open air. Last winter I kept some fifteen dozen *Geranium* and *Calceolaria* cuttings with about three sacks of charcoal. The expense of the apparatus was 8s. As will be seen from the sketch, no fumes can escape, as the plug d is outside the house, and the plug c entirely closes the upright pipe except when feeding the fire. This contrivance may be useful to any who do not care to go to the expense of a regular flue. I shall be happy to show this stove to anyone who wishes to see it.—H. J. T.

WORK FOR THE WEEK.

KITCHEN GARDEN.

KEEP the heaps of compost well turned over, as the time is approaching when every advantage must be taken of frosty

mornings to wheel it over the land. As a general rule, ground that is very deeply trenched should be manured after trenching, and the manure forked-in, except in the case of fusiform-rooted plants, which will require the manure to be trenched-in deeply and not incorporated with the surface soil. Trenching up all vacant compartments must be vigorously followed up, taking care to turn-in all green and decaying refuse, which is much better than throwing such materials in a heap to decay, for this entails a positive loss of fertilising matter. The large amount of rain which has fallen recently has in most places interfered considerably with the progress of out-of-door operations. Whatever remains of *Celery* earthing should on such occasions be attended to. Digging, trenching, the formation of fruit-tree borders, and any necessary working on the soil, should be proceeded with as early as circumstances will permit. Any kitchen gardener without a tank to receive the drainage of the dung heap, or for the mixture of manure and water, should speedily remedy the omission. The weather has favoured the slugs, if nothing else, lately; they must be closely looked after, or the destruction of the young and tender Cabbages and Lettuces will infallibly be the consequence. *Kidney* and *Haricot Beans* not sufficiently matured for preservation for seed, may, nevertheless, be supplied to the table. They will form an excellent and wholesome dish. Protect *Rhubarb* intended for forcing, and remove all dead and decaying leaves from both the *Rhubarb* and *Sea-kale* beds.

FRUIT GARDEN.

Pruning Pears, Apples, Plums, Cherries, and Currants should be carried on, and nailing should be commenced. Much more can be accomplished in a day, and with greater ease, when the weather is mild. Lay the wood in easily without an abundant quantity of shreds; a good eye and a quick hand are the essentials in this matter. Let the shreds correspond with the size of the wood. Prepare shreds and clean nails in wet weather.

FLOWER GARDEN.

When the land is not too wet, alterations of ground and planting should be carried on with dispatch, but on no account attempt planting when the soil is in a state of puddle; the drier the soil is when placed round the roots of newly-planted trees and shrubs (provided they are judiciously watered-in), the sooner they will emit fresh roots. Mulching is, however, requisite to keep out frost, and earlier in the season to prevent evaporation. As tree leaves are always in request either as a fermenting material or for leaf soil, they should at this season be carefully collected. If they are required as a manure they may be stored away in any by-place and left to rot; but if, as is generally the case, they are in demand as a cheap mode of furnishing bottom heat to Pines, as well as for forcing different kinds of vegetables, some pains should be taken to keep them dry. For this purpose they should be stacked-up in some dark place or behind the garden walls, where access may be had to them at all times, and, after allowing time for them to settle, put on a coat of thatch to effectually secure them from rain. By these means they will be found in a state fit for use for a twelvemonth to come. During the present month more than common attention is required to preserve the garden from the desolating effects of the weather. All traces of the sedulous care and cleansing of one day may be effaced by the storms of the next. Flat, or ill-drained and constructed gravel walks will suffer from deposition of mud from pools which such walks are liable to; this if not removed immediately, will destroy the appearance of the gravel. Examine all gratings, drains, and watercourses, and prevent as far as possible the evil above alluded to. The importance of a well-drained walk free from the influence of trees, their shade and moisture, will be appreciated by those who recognise the importance of exercise and fresh air in all weathers and seasons. Walks subject to moss had better be raked and left rough and loose during the winter. The protection of half-hardy plants established out of doors will shortly call for attention, mats and fern should be duly prepared for the purpose. Collect Hollyhock and other seeds; transplant Sweet Williams and Wallflowers into borders; plant bulbs, and examine those previously set. Mice are particularly prone to destroy them.

GREENHOUSE AND CONSERVATORY.

In most places Chrysanthemums will be the chief feature of attraction at present, and where these are largely grown, which they should be wherever there is a demand for flowers at this season, they make a fine display, and are worth every necessary attention to preserve them in beauty as long as possible. They are very impatient of a close rather warm atmosphere; and if the house contains plants requiring this treatment, the Chrysanthemums should, as far as possible, be placed in the coolest part, where air can be given freely on every favourable opportunity, for unless they can be freely exposed to air their foliage is soon attacked and disfigured by mildew, especially if the plants are bushy and well grown. See also that they are kept well watered at the root. Use fire heat only when it is absolutely necessary, either to prevent the temperature from falling too low, or to dry the atmosphere. If Calceolarias, Geraniums, and Cinerarias must be wintered in the same house with Heaths

and other hardwooded plants, they should be kept as much as possible by themselves, as they will require a somewhat closer temperature than hardwooded plants; but where circumstances admit of it these should occupy a house or pit by themselves. Cinerarias and Geraniums intended for late flowering will do very well in a cold pit if the weather should not prove very severe; but those intended for flowering very early should be placed at once where fire heat can be used at will, so as to be able to preserve the foliage from damp. Roses for early forcing should be pruned by this time, and placed where they will at least be safe from heavy rains. Where American and other shrubs are used for forcing they should be taken up and potted without delay, placing them in a cold pit until they are wanted for forcing, or in a turf pit, where they can be protected in severe weather by straw mats, shutters, or other covering.

PITS AND FRAMES.

Everything should be finally arranged here as soon as possible. See that the Mignonette has a very light situation, plunged close to the glass at the back of a frame free from drip. Store Verbenas growing rapidly should have their tops pinched, as also Petunias and other ordinary mass flowers. Admit all the air possible, and give water grudgingly. Leave air on all night, be it never so little; this should be done even when matted overhead, except in very severe weather. Now is the time to pot all the Cape Iridaceæ, with others from Mexico, Chili, &c. The whole order delight in light open soil. The stronger Gladioli and the like are much benefited by the addition of one-third rotten leaf mould, the rest peat and light loam in equal portions, with a little sand; and the more delicate sorts do better in two-thirds sandy peat, the rest of loam and sand in equal proportions. The Hyacinths, Tulips, Narcissus, &c., to flower late in the spring, may now be potted, and those first potted will now have the pots pretty well filled with roots, and may, therefore, be brought into a glass frame to get up the foliage and flower-stems slowly, when smart forcing will not much injure the bulbs.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

THE work has been much the same as mentioned in previous weeks' notices. We prepared *Rhubarb* and *Sea-kale* for forcing in the Mushroom house, cleared-off the withered stems of *Asparagus*, and will throw a little salt and some decayed dung over the beds, not because it is the best time, for that is in summer, but the salt now will keep weeds, worms, and slugs under, and the roughish dung will protect the crowns from the extremes of frost. It is always advisable to give an extra covering to *Asparagus* intended to be taken up and placed in pits or frames for forcing. This wasteful plan can only be defended on the principle that ground from which *Asparagus* is thus taken is valuable in carrying out a rotation of cropping. But for this, beds forced where the plants grow would ever be the most economical system in the end. However, we have been able to do little this way, and mostly take the plants up; in all such cases the roots are thrown away afterwards, at least we cannot use them as we do forced roots of *Rhubarb* and *Sea-kale*, which are often brought in to force again after they have had two summers' free growth. Though we like to force *Asparagus* where we can green the shoots by free exposure to light and air, we have often had fine dishes from old roots placed in warm dark places, and then the shoots were exposed for two or three days, when cut, in a light place, with the temperature not lower than from 50° to 60°. Even when this vegetable is forced in frames, air should not be given too freely in cold weather, although a few degrees above freezing, for a cold temperature is very apt to make the shoots hard and stringy.

Mushroom House.—The wet close weather made us take away all the artificial heat we could, as a fresh bed that has just been reduced enough in temperature for spawning made the house quite hot enough, and we prefer in general to lower the temperature in winter instead of admitting draughts of air. We never much care how much the diameter of a Mushroom may be, but whenever the stalks become rather long it is a good sign that the temperature has been quite high enough. Much can be done by uncovering when there is the least sign of drawing the footstalks, and much may be done with a little dry covering when the Mushrooms do not come fast enough for use. For keeping woodlice down there is no simpler plan than pouring in hot water at the front and back of the beds. If a small spout be used for the purpose the beds will be little or not at all injured. A friend of ours used to apply water nearly at the boiling point all over his bed, and the Mushrooms, he said, never suffered. However, we never went so far as that, and we knew of some cases where wonders were to be done by this mode, but no Mushrooms were gathered. We do not like extremes of any kind. When a bed is made in a house there will often be a little crevice between the bed and the material by which it is bounded; and there, if the crevice is not one-eighth of an inch wide, woodlice will congregate, and a little boiling water, or water not far

from the boiling point, poured down will destroy the woodlice and do no harm to the bed if used sparingly at these crevices. With every care it is hardly possible to have Mushroom beds without also having woodlice, as, however much you may clean, smoke, and scald the empty house, the woodlice are carried in with the fermenting material.

At this season, and in such dull wet weather, it is difficult to get the material for Mushroom beds dry enough. One of the simplest modes is to throw the material into a heap, and if really very short and damp, to cut up some dry litter or straw and mix with it, covering the outside of the heap with dry litter. It will then soon heat itself, so as to be sweet and sufficiently dry. Of course, we are aware that by this mode some of the most nutritious properties of the manure are dissipated, but by the practice we save time and labour, and obtain Mushrooms as thick and fleshy as cooks care to have them. One bed gave Mushrooms rather thinner than we liked them, but to bring them in we gave them rather too much warmth. In spawning a bed we have put about half an inch of moist cow dung under the soil. With fair treatment that will ensure Mushrooms thick and fleshy enough.

Provided we have 2 or 3 inches, chiefly of droppings, for the surface, we care comparatively little what the bulk of the bed is composed of, so long as it will retain a mild constant heat for some time. One of the best beds we ever had in an out-door open shed was made chiefly with tree leaves, a little long grass, and cut stubble. After being firmly trodden it had altogether a surfacing of from 2 to 3 inches of droppings mixed with short litter. The depth of the bed was 18 inches at the back and 14 inches in front. When cleared out after a twelvemonth almost every straw of the stubble was covered with the spawn. The bed had several manure-waterings, made by steeping cow and sheep dung in warm water some days before using it.

Cucumbers.—In such dull wet weather it is better to have a comparatively low temperature instead of a high one. Particular care should be taken that much fire heat and sun heat do not act together, as it is trying to the plants after such dull weather. A slight skiff may be given from the syringe, but if a bright day should occur suddenly, it will be better to have less fire heat, and even a little shading, instead of a great addition to air-giving.

Dwarf Kidney Beans.—We have gathered the last from an earth pit, which we could protect with old sashes, &c. Had the weather been sunny, we should have gathered some time longer, but the continual rain made the plants begin to damp-off. A late crop from the open air is thus often worth trying for. Those in forcing pits and houses should seldom in such dull weather be much above 60° with fire heat alone. Little can be done with them by fermenting heat in winter, unless all damp and steam are shut out.

FRUIT DEPARTMENT.

The ground hereabouts is too wet to permit of fruit-tree planting, but it must be kept steadily in view, as the sooner the roots are in their new places the better they will thrive. The more the soil is sweetened and exposed to the air the better will the plants thrive; and where such material can be obtained, every tree should have one barrowload, or as much as can be obtained, of sweet new loam, such as that obtained from meadows or the sides of highways, with the grass decomposed and the fibre not yet wasted away. For giving least trouble afterwards, and insuring early and continuous bearing, no plan is simpler than planting on raised mounds, and mulching the surface for some years afterwards.

Pruning may now be proceeded with where the ground is not so wet as to become puddled with the feet. Most of the foliage is now changing, and cutting, though removing a few leaves with a little green on them, is a matter of little importance, and it is very desirable that all such work should be forwarded as much as possible, for the spring brings a multiplicity of matters to attend to.

Strawberry plants in pots are now all under some protection from rain. We shall place a lot in frames presently, with just the least heat below them to give them a gentle start.

Orchard Houses.—In order that these may help us as protectors by their glass roofs, we have removed the most of the now discoloured foliage, as thus we secure more room for many plants that will be found useful. Even Chrysanthemums for cutting are much safer than standing anywhere out of doors. Lettuces, Endive, Violets, &c., may thus be safely kept. No better place could be found for Strawberry plants in pots, but we cannot accommodate them there at present. There is scarcely a garden, large or small, but there will be plenty said of the lack of all such accommodation. Even such unheated houses are most useful, and dear coal cannot be urged against them. If the present price of fuel continue, people will begin to think of utilising the heat that goes into the air from boiler chimneys. A good long flue could be taken from many a boiler, and its heat thus utilised.

We may remark, in passing, that in a furnace for a flue, or a furnace for a boiler, it is a great mistake to bring the firebars

close up to the furnace door—for what reason we know not, except the saving of a stout dumb plate next the door. We have met with a number of examples of this. The direct tendency is to heat the furnace door extremely—in fact, burn it out quickly, heat the stokehole almost unbearably, and, if in the open air, heat the air common to everybody, and to lessen free draught where most you want to have it. A large dull recess at the farther end of a furnace will generally be found a large mistake.

ORNAMENTAL DEPARTMENT.

We took up more *Geraniums*, so that we can clear them if we think proper. The best of scarlets we may honour with a 4-inch pot, and just a little bottom heat at first. The doubles and others first potted, though in 6 and 7-inch pots, are now matted with large white new roots. Others that we keep in boxes and large pots we treat on the faggot system—that is, we cut the heads pretty well in, and dip the cut parts in quicklime to stop bleeding and damping. We cut a little off the roots if long and straggling, and then pack them as thickly as they will go in boxes and pots, say from twelve to twenty plants in a 12-inch pot. We find it best to leave, say, 1½ inch from the rim of the pot, water the pots fairly, and when well drained-off we cover with an inch of dry soil. These will stand under stages or in any cool place airy and free from frost, and will give little trouble until about March, when some small leaves will begin to come, and they will then want more light and room. Any cottager may thus easily save a score or two of plants. The secret of this easy mode is not to encourage growth in winter, but merely to keep safe the oldest hardest part of the shoots. No young plants with nice green leaves can be kept in the same way, they must have light and air.

Calceolaria Cuttings.—We put in our last on October 31st, pricking them out in a cold pit. We generally have the rows from 2 to 2½ inches apart, and the cuttings about 1 inch apart in the row. Some years we do not lose one in a thousand. We are quite satisfied if they stand well and do not root much until after Christmas. We like fresh sandy soil with a little fine leaf mould in it for the staple, and a sprinkling of sand all over. We prefer small side shoots when obtainable. In dull weather we give air night and day. In a bright day we do not admit air, and, perhaps, slightly dew the cuttings to check free perspiration, preferring that from first to last the cuttings never flag. By such means, and coolness and moisture, it is rare that an insect ever troubles them. We then thin out, with small balls, into earth-pits about the middle of March, and from thence they are taken to the flower garden with good balls in May.

Besides the work alluded to last week, wet weather gave us a good opportunity for examining and potting Ferns, top-dressing Camellias, Chrysanthemums, late Fuchsias, Poinsettias, Euphorbias, and Justicias, as now is the time to help the free blooming of all these plants, not forgetting *Salvia splendens*, which is a grand plant now, where enough of heat and light can be given to huge plants. Two things must be kept in mind whilst this moist, close weather lasts—not to use much fire heat; and in watering to be careful not to slop the water about, as it might have been desirable to do in bright days in summer.—R. F.

TRADE CATALOGUES RECEIVED.

Kelway & Son, Langport, Somerset.—*Wholesale Price List of Gladioli.*

Edwin Cooling, Mile Ash Nurseries, Derby.—*Descriptive Catalogue of Roses, Fruit Trees, Ornamental Trees, Shrubs, &c.*

George Davison, White Cross Nurseries, Hereford.—*Descriptive Catalogue of Roses.*

Little & Ballantyne, Carlisle.—*Catalogue of Forest and Ornamental Trees, Shrubs, Fruit Trees, &c.*

TO CORRESPONDENTS.

N.B.—Many questions must remain unanswered until next week.

GARDENERS' ROYAL BENEVOLENT SOCIETY (A. P.).—Write for the rules to Mr. Cutler, Secretary, 14, Tavistock Row, Covent Garden, London, W.C.

BOY GARDENERS (W. W.).—We never knew gardeners act as you mention, and employers ought to be their own protectors in the very few instances that can have occurred.

VEITCH MEMORIAL (Penkridge).—There is a portrait in the Council-room of the Royal Horticultural Society, and the balance (upwards of £890) is invested in the names of trustees, who are to devote the interest to awarding prizes for the advancement of horticulture in the three kingdoms.

CIRCULAR DISCS ON OAK LEAVES (E. E. E.).—What you call "blight" are commonly called "Oak spangles." They are caused by a very small insect puncturing the leaf, and depositing her egg in each puncture. The spangle is formed by the grub hatched from the egg. The mother insect is a Cynips, and is known to entomologists as *Diplolepis lenticularis*.

SOCIETY OF ARTS EXAMINATIONS (E. K. L.).—You had better write to the Society's Secretary. He can furnish full particulars.

REMOVING TREES (Clegg).—Very properly it is illegal to remove trees. Before a tenant plants he should have an equitable arrangement with his landlord. It would be equally illegal and unworthy to cut them down. A tenant

has been justly punished for digging up a bed of Strawberries previously to giving up possession.

DISA GRANDIFLORA (C. J. W.).—Our artist could not draw from the copy.

PEARS CRACKED AND SCABBY (Sea Cliff).—The roots have probably descended deeply and into an ungenial subsoil. Dig a trench by each tree to enable you to get at and cut through the descending roots, and manure the surface and keep it mulched throughout the summer to promote more shallow rooting.

FUNGUS (R. T. T.).—The fungus you have proved to be edible is a well-known esculent species, *Agaricus persoonatus*. In some places it is called 'Blewits,' and at one time was sold in our markets.

DESTROYING GRASS AND MOSS IN PAVEMENT AND ASPHALTED WALKS (J. S. A.).—Dissolve 1 lb. of powdered arsenic in three gallons of cold water, boil and keep stirring; then add seven gallons of cold water, and 2 lbs. of crushed soda, stir the whole well whilst boiling, and with a rose watering-pot apply to the walks in dry weather, from March to May inclusive being the best time. The above quantity will be enough for twenty-five square yards. An inclining board should be placed at the sides of the walks or grass to keep off the hot liquid.

SCILLA PRECOX TREATMENT (W. T.).—It succeeds in a pot or planted out in the open ground. Six or eight bulbs should be placed in a 6-inch pot, which should be moderately drained, and filled with a compost of two parts light loam, and one part leaf soil, with a free admixture of sharp sand. In potting, the bulbs should be just covered with soil. Place them in a cold frame, and in six weeks after potting set them in a light airy position, in a greenhouse, and they will flower early in spring. You may, instead, plant out in ordinary soil; light, rich, well-drained loam is best. Plant them about an inch deep, and the same distance apart. As a double ring they make a very effective edging to a bed. This *Scilla* grows about 4 inches in length, and freely produces its pendent, azure, bluebell-shaped flowers.

SHORTENING STEPHANOTIS SHOOTS (Madagascar).—We should not prune or shorten the shoots 8 or 10 feet long, but train them in at their full length. If the wood be well ripened you may expect a truss of bloom from nearly every joint.

ROSES FOR BED (Amateur).—We consider the best kinds for a bed are the Hybrid Perpetuals. We should have standards for the centre, then half-standards, with dwarfs on the margin, say a double row all round: the latter we should have on the Manetti stock. The following are good and free growers—viz., Alfred Colomb, Baroness Rothschild, Camille Bernardin, Charles Lefebvre, Dr. Andry, Duke of Edinburgh, Edward Morren, John Hopper, Boule de Neige, La France, Mdle. Marie Rady, Marguerite de St. Amand, Perfection de Lyon, Pierre Notting, Senateur Vaisse, Thorin, Xavier Olibo, General Jacqueminot, and Comtesse d'Oxford, with Gloire de Dijon, Tea-scented. November is the best month for planting; there is less danger of loss from planting then than if it were deferred until spring. Mulch about the plants with litter after planting.

GALVANISED WIRE (F. J.).—We have not found galvanised wire injurious to the branches of fruit trees out of doors. We should be obliged if those having used galvanised wire would state their experience of its effects, if any, on trees trained with it both in-doors and out-doors.

ADMITTING AIR AT NIGHT (E. C.).—We would leave the half inch of air at the back of the frames containing *Calceolaria* cuttings at night whilst this warm close weather lasts, or until frost come, when we would shut up. Close shutting-up at night is the first thing to make cuttings weak and then to damp. For cuttings generally, when there is little sun, it is well to allow the air to remain on. On a bright day we shut up closely, and late in the autumn we prefer just dewing the cuttings from a fine syringe in preference to shading. Sudden extremes must, however, be guarded against. Cuttings that need no care in dull weather would fall down before bright sun coming on them suddenly. The great point is never to allow a cutting to flag. The safest artificial manure for such plants is superphosphate of lime, 3 ozs. to the gallon. Weak sheep liquid is also very good.

HEATING FROM KITCHEN BOILER (E. Payne).—You would want fully 100 feet of 4-inch piping for the orchard house, to grow such a collection as you name. We are sorry to say that, after all possible care and trouble, we have no faith in your heating these ranges of houses from the kitchen boiler, when the first thing you must do is to take the hot water 3 feet lower than the boiler. It matters less though you raise it afterwards. As a general rule no hot-water pipe should descend below the level of the boiler. For such a range you had better have a separate boiler, with all the pipes above its level, at least not below it.

HOT-WATER CISTERN OVERFLOWING (J. R. G.).—Your cistern in connection with your hot-water pipes runs over because, as the water heats, it expands and requires more room. When the water cools it contracts, and the cistern will be left empty. The boiler is, probably, too powerful for what you want, and your first remedy is to use less firing; your second is to enlarge your cistern to more than double the size, so that by not having the cistern nearly full there will be room for expansion without running over.

MUSHROOMS IN A CELLAR (Inquirer).—You cannot have a better place than your cellar for Mushrooms all the year round. In winter the beds might need a little dry covering to keep them at a uniform temperature.

PLANTING STRAWBERRIES (A. Dumbell).—In such a case as yours we should prepare the ground and then lift your Strawberry plants with balls, and plant out on a fine day in March or the beginning of April.

PLANTING APRICOTS AFTER APRICOTS (C. H. W.).—If you plant young Apricot trees where old ones have died you ought at least to give each tree six barrowloads of good fresh loam. The soil may be enriched afterwards if wanted, but the bulk of the border would be improved by trenching and exposure, and would be sweetened before the young roots reached there. Fresh soil would be best. Apples may succeed Cherries, and the contrary; but in their case, too, maiden soil would be preferable, near the new roots especially. With such a boiler you can heat from 350 to 400 feet of 4-inch piping.

CONSTRUCTING AN ORCHARD HOUSE (J. R.).—We are not sure whether you contemplate a lean-to or a span roof; if the former, a board 1½ inch thick, and from 7 to 9 inches wide, should be fastened with bolts and screws to the wall, so as to receive the ends of the rafters, and be easily taken away. For your purpose, if there is no wall, a span roof would be best and cheapest, and you should build on stout blocks of wood. For a neat useful house 12 feet wide you could have the sides from 8½ to 5 feet high, height at the ridge from 7 to 9 feet, a walk down the centre, and a platform or stage on each side. For a house 20 feet long, an opening over the doorway at each end would be ample for ventilation. If you had two openings on each side

we would have one square of glass on each side, say from 12 to 20 inches deep, fixed in grooves, and the wooden ventilator beneath. For a lean-to the rafter sash-bars would require to be 4 inches deep and 1 inch in width; for a span roof the rafter sash-bars should be from 2½ to 3 inches deep, and in either case placed thick enough to receive glass about 15 inches wide, all cut to the same size. We do not understand your mode of using slips of wood to receive the glass underneath these rafter sash-bars. We should prefer no laps, grooving the sash-bars, making them deep enough to permit expansion on each side, and fastening beneath with slips of india-rubber or soft cord. For ordinary purposes wooden sides 1 inch thick would keep out more frost than a 4½ brick wall. For such a house, if you want to keep tender plants in winter, you must have a small iron stove. If you wish for a cool orchard house you will want no stages, but have a bed on each side of the pathway.

COST OF DIGGING AND TRENCHING (A Young Gardener).—Digging light garden ground a spit deep would cost from 2d. to 3d. per rod; heavy ground, 4d.; trenching light soil two spits deep, 1s. 1d.; heavy soil, 1s. 4d.

ROSES FOR EXHIBITION IN AUGUST AND SEPTEMBER (A Five-years Subscriber).—For exhibition in August you will need to prune the plants late in spring. A better plan is to allow the shoots to grow until May, and then shorten them to within five or six leaves of their base. This will cause them to flower strongly in August and September—much more strongly than were you to allow them to flower at the usual time, and then depend on the second flowering for bloom. We should shorten the shoots of a portion of the plants in May, and another portion early in June, and with good varieties and good cultivation we consider you will stand a chance of success. The plants can hardly have too high culture, and another essential is to keep the foliage clean. Only allow the plants to carry a fair amount with the weak buds removed.

STOREROOM FOR FRUIT (Ilan Thomas).—We see no objection to your house or room; only, owing to the pipes passing through it, the atmosphere will be too dry for keeping the Apples without shriveling, and it will be too warm for Apples or Pears to keep long and well. The only suggestions we have to offer are to arrange the hot-water pipes that you may ensure the temperature from falling below 40°. Keep the temperature as near that as you can, not raising it more than 45° from fire heat, and dry the fruit by means of ventilation in damp weather. Keep the room dark. When ripening, the fruit should be placed in a room well lighted and ventilated, having a temperature of 45° to 50°.

TRICRYTIS HIRTA AFTER FLOWERING (Constant Reader).—Keep the soil no more than moist in winter, and let the plant have a greenhouse temperature or be safe from frost. When it is growing freely water copiously up to flowering, afterwards merely keep the soil moist. It succeeds in two parts light fibrous loam, one part sandy peat, and one part leaf soil, with a sixth of silver sand. Good drainage is necessary.

PRUNING JASMINES AND HONEYSUCKLES (Maria).—The shoots should be regulated now, thinning out those which are old and weak, and training-in the strong in their place. In February, or before growth begins, the shoots that will not train-in well, or for which there is not room, should be cut back to within half or three-quarters of an inch of their base, and these will produce flowering shoots. The long shoots trained-in will also give rise to many short stubby shoots with flowers. Cut away the irregular growths in summer after flowering, but do not shorten the shoots—merely remove the parts which have flowered.

BLUEBOTTLE FLIES IN VINERY—MANAGEMENT OF VINES (West Cumberland).—Bluebottle flies damage the Grapes very much; they find out damaged parts in the berries and suck the substance out of them, but we never saw them do any injury so late in the season as this. You should place gauze or fine wire netting over the ventilators to keep them out. Where the berries are hanging ripe, now and during dull wet weather fires ought to be kept on in the day, with the ventilators open; fires should only be kept in at night when there is danger of frost getting in. Make the outside border any time during the winter. As you have had much red spider on the Vines, wash all the woodwork of the house with warm water in which very little soft soap has been dissolved; wash the wood of the Vines, after they have been pruned, with soft soap and water, and afterwards paint with a mixture composed of sulphur with soft soap and a little soot added.

VINES FOR GREENHOUSE (A Constant Subscriber).—Your house, 10 feet long, will afford room for three Vines as you propose, the end ones 18 inches from each end, and the others at 3 feet 6 inches apart. The kinds we advise are Frankenthal, and Trentham Black; Buckland Sweetwater, or White Frontignan as white. For ripening in July you will need to start the Vines early in March, keeping the temperature at 55° after the Vines are in leaf, and 60° to 65° at night after they are in flower, with a rise by day of 5° to 10° in dull weather, and 15° to 20° with sun and abundance of air. Your plants will be ruined by this temperature; therefore we advise you to treat as for greenhouse Vines, giving only a little extra heat in cold periods. An Apricot or Peach would succeed. Now is not too late to plant for fruiting next year, but we should not plant until the shoots were 1 or 2 inches long.

NAMES OF FRUITS (E. Cox).—It is the true old 'Seek-no-farther.' It is portrayed in Ronalds' 'Fytus Malus Brentfordensis,' and in Hogg's 'British Pomology.' (*Musk Pear*).—One Pear is Duchesse d'Angoulême, and the other Flemish Beauty. (*W. Duley, jun.*).—The Apple is Alfriston.

NAMES OF PLANTS (Darlington Amateur).—We cannot name varieties of florists' flowers. There is a legion of Fuchsias nearly like the specimen. (*Sea Cliff*).—The shrub is *Hippophaë rhamnoides*; the other, *Acanthus mollis*. (*E. Walpole, jun.*).—(*Eriothera macrocarpa, Pursh*; *C. missouriensis, Bot. Mag., t. 1592. (Flora)*).—Apparently some *Escallonia*, but we received no leaves. (*Mac*).—None of your Mosses being in fruit, we cannot attempt to name them.

POULTRY, BEE, AND PIGEON CHRONICLE.

TO ALL NEGLIGENT SECRETARIES.

It seems ungracious to be finding fault with those who labour hard gratuitously, but on one point I must regularly, year by year, appeal to you, until I find the appeal makes some impression where it is needed. My rule is always to send the price of a catalogue and prize list to the secretary of a poultry show, with

my entries, and the secretary's rule seems to be *not* to send them. There are, I am glad to say, some business-like exceptions, but I find as a general rule that catalogues are forwarded either late or not at all. Now, after they have been paid for, I hardly think the latter is honest; and surely it is not hard to address wrappers, as the entries are received, to those who forward the price of a catalogue, and, as soon as the catalogues and prize lists are issued, forward them at once in the previously addressed wrappers. The want of this is one of those small annoyances that are more irritating from their perpetual recurrence than is some more serious matter which only happens now and then.

A few weeks ago I purchased two pens of birds at a show, of which one pen travelled elsewhere for a fortnight, and finally arrived from the east instead of the west; but I was less "put out" by this than I am at the present moment from not having received a catalogue of a show which closed forty-eight hours ago, and from which my birds have not yet returned, although the distance is not eighty miles. I believe, although I have not tried both, that you may walk with less irritation with a wooden leg than a blistered heel.—E. S. TIDDEMAN, *Childerditch Vicarage, Brentwood.*

DEALERS AND SHOWS.

SOME weeks since I received a very urgent request to give my views on dealers exhibiting at poultry and Pigeon shows, and wrote back declining to do so. I did this partly because an article on the subject, which I knew to be in my friend's mind, had appeared in another journal; but chiefly, as I told him, because I hardly thought it really "worth powder and shot," being written by one who is known to be no authority whatever among skilled Pigeon-fanciers.

The request has, however, been repeated by others—I fear those who thus ask my opinion attach far too much weight to it—and the evils of such personal attacks are so liable to multiply and grow independent of the standing of their authors, that I have thought it might be well if not only myself but others should freely discuss the question on all sides, in candour and good faith.

To all acquainted with the facts it will be at once apparent that this new crusade against dealers is prompted solely by the very same egotism and pique which, it is well known, did more than anything else to break up the once-promising Poultry Club. The egotism is sufficiently manifested by the fact, that the new higher-priced selling classes at the Crystal Palace and Norwich have subsequently been coolly assumed to be the consequence of this attack upon the dealer class, whereas they were suggested in this Journal nearly a year ago. No one can positively say that the Crystal Palace classes were a consequence of this suggestion; but I do know, on the authority of the Secretary himself, that the Norwich were, and I actually wrote one or two of the sentences which appear in the Secretary's address; yet both have been virtually spoken of as if the result of the personality alluded to. The pique is equally evident, being, indeed, scarcely disguised. Special complaint is made that the dealers regularly protest against "certain gentlemen," who are assumed to have rendered themselves obnoxious by opposing trimming, and that they refuse to show if Mr. — is to act as judge. Now it would be easy to name those gentlemen who have been most prominent in thus putting down dishonesty, and who never on that account are so complained of; and let us remember further that the dealers who are the subjects of attack are of necessity the most competent men in the fancy, and the keenest to detect any incompetency through which they may have suffered. I am, however, the last to deny that there is much room for fair difference of opinion on the merits of the case, and any temperate discussion of it must therefore do good, and I hope will follow. I will just now make a few remarks which occur to myself.

1. It is said that "a man who buys and sells for gain is a dealer, whether he keeps a shop or adds to this occupation any other business." Now, I scarcely know a single amateur who is indifferent to the profit and loss of his yard, or who is not anxious to make it pay if he can. I have heard amateurs in the very strictest sense of the word tell with pride how much they made by their fowls last year; and no one can possibly sell without gain being the object. I know a farmer who regularly calculates on two or three score of pounds annually from his fancy poultry: is he therefore a dealer? The number of amateurs who make a moderate profit by their fowls, and who partly keep them for that profit, is now considerable; and I might even go further, and say that no amateur ever enters upon the pursuit at all but hopes to be one of the lucky ones who make a gain of their birds. I cannot see why carrying this further yet, and making it a really profitable as well as pleasurable pursuit to breed and sell prize birds, is not as perfectly legitimate as to breed Shorthorn bulls.

2. I would warn amateurs who may be jealous of such professional men that the question is not all one of rival interests:

their own interest is in great measure involved. If the best birds, purchased regardless of expense, are no longer permitted to be shown, the price of first-class fowls will inevitably decline, and with that decline will go one of the sources from which they defray the heavy expenses of their yards. I say heavy expenses, because every amateur has, when fairly embarked, to incur such. He must buy first-class new blood from time to time to recruit his strain, he must pay heavy food-bills, and he often has to pay high rent and wages too. An occasional sale at £10 to £20 is a mighty help to meeting these heavy outgoings; but if free competition is denied it will be available no more, and his whole stock will be depreciated in value to an enormous amount, while the very credit of winning would be immeasurably decreased, for who would care to be a Triton among minnows? For my part, if I could not win in good company I would not care to win at all.

3. Any real fancier can thus contend successfully even with dealers in fair fight. The mistake people make is that they *will* keep such a lot of breeds. The dealer can do this and succeed, because he makes his whole business of it; but the amateur cannot, therefore as an exhibitor he fails. But let him choose some one breed, stick to it, love it, study it, and ere long he will "make his mark" on the fancy. I never knew a single exception yet to this rule, where anyone kept on and bred the same breed carefully for three years running.

4. I am, however, far from saying that no qualification of this free competition is necessary. It was to meet whatever need of such there was that I suggested the plan now being tried, of establishing selling classes at fair but still limited prices. Here all may find their level, for I suppose no one will contend that it is desirable to give prizes to actually bad birds. It is in this way I think all interests may be conciliated; and by thus having open classes and limited classes everyone may be benefited and find a place, without either the serious evils of handicapping or any wretched attempt to exclude our highest standard birds from competition. No dealer, I am convinced, will feel any jealousy whatever of such classes; indeed, a large breeder and dealer whom I know well was one of the warmest advocates of the Norwich experiment. I trust and believe that experiment will succeed, and if it do it will do good, and doubtless be imitated by others.

5. It might also be well, I think, if our most esteemed judges would be still more severe than they are with overshorn birds, or even mark their disapprobation in gross cases by notice on the pens or in the catalogues. I know they feel the evil, for I have letters from our two best authorities on the subject. A time comes when they cannot give any more prizes to the poor broken-down birds; but it may, perhaps, be suggested that if the penalty of passing over were inflicted earlier in some cases it might not only check a growing evil but save many a valuable bird. If the words "Disqualified for overshooting" were the penalty in very bad cases it might be still more effective, without leaving such sore feelings as a similar penalty in cases of fraud. But I fear such stringent measures have little chance of adoption.

I had intended adding some paragraphs on general show matters, but must defer them to a future occasion.—L. WRIGHT.

OXFORD POULTRY AND PIGEON SHOW.

A POULTRY and Pigeon Show on a scale of any magnitude had never been attempted in Oxford till last week, when the Corn Exchange and Town Hall were occupied with as fine a collection of poultry as has been gathered together anywhere in Great Britain during the past season. There were no less than forty-nine distinct classes, and the Committee found, long before the time for closing the entries arrived, that the Show, which was originally intended should be confined to the Corn Exchange, had assumed proportions that could not be accommodated within that by-no-means small building, and consequently they added the Town Hall to their space, and were even then obliged to decline a number of entries. In the Corn Exchange were the heavy poultry and the Ducks and Geese, whilst in the Town Hall were the Bantams and Pigeons. In Coloured Dorkings, the three first prizes were very worthily bestowed. The excellence of this class may be imagined when we say that the third-prize birds shown are the same pair that took the first prize at the National Show at Croydon. In Silver-Grey Dorkings, the champion at Oxfordshire local shows carried off the cup against eleven other competitors. The class for any other variety of Dorkings was also exceedingly good, the cup birds being among the best shown this season. *Spanish* were of average merit; the cup cock and hen also took the honours at the Croydon Show. Cinnamon and Buff *Cochins* were a good class. In Partridge *Cochins* Mr. E. Tudman carried everything before him. Any other variety of *Cochins* was, as a class, declared by the Judges to be the best they had seen for years. In Dark *Brahmas* the first and second prizes were taken by Mr. Lingwood, with the same birds that carried off the honours at the Ipswich Show a few weeks since. The Light

homœopathic treatment he has been subjected to some little disappointment. I can assure him that if the remedies have been, as he says, "entirely inert," it can only be through their having been incorrectly administered, or through some unfavourable conditions. I regret now that I was not somewhat more explicit in my last letter respecting the administration of the various remedies; but the fact is, that with a view to economise your valuable space, I left a great deal of useful information to be gathered from such *vade-mecum* or guide book as your ornithological correspondents might think fit to purchase ere commencing practice. The only details I furnished in this respect were, I believe, under the heading of "indigestion, rupture or surfeit," as I considered this the fancier's greatest trouble, and moreover it was a disease which had given me my most extensive, and, in every case, satisfactory practice.

Your correspondent's want of success is doubtless attributable to one or more of the following causes—viz., an incorrect diagnosis of the disease, too frequent changing of the medicines, neglecting to thoroughly cleanse the water-bottle or tin prior to same, the mixing of medicines which are antidotal to each other, unsuitable diet, changeable temperature, or other conditions prejudicial to the health of an asthmatic patient.

With regard to mixing medicines, although it has sometimes been done, it is certainly not in accordance with the Hahnemannian doctrine, for it precludes the possibility of ascertaining the action of any single agent. In acute diseases, when more than one remedy is indicated, it is usual to give them in alternation, but this also should as much as possible be avoided; as a rule, therefore, one remedy which is applicable to most or at least the principal symptoms, should be given alone, and if really necessary be followed by others alone when indicated. When the effect of a remedy is satisfactory it is, of course, unnecessary to change to another, and all that is required is to diminish the quantity and frequency of the dose until the patient is convalescent.

It will be seen from the foregoing that a careful study of the *Materia Medica* is of quite as much importance as the study of the disease, for when you have discovered the features of the latter you require to select a remedy with similar ones.

I have occasionally, as will be seen by my former letters, mixed medicines, but of course always avoided mixing those which were antidotal to each other; but this confusion, as a rule, must be attributed to uncertainty, though in my cases it was prompted by the knowledge of the slight thread by which a Canary's life sometimes hangs, and the sometimes speedy fatal terminations of their ailments. I always had beneficial results, but have no doubt but that I could have obtained the same quicker by giving singly or in judicious alternation. As a list of the remedies and their various antidotes would occupy considerable space, I must refer your correspondent to some homœopathic work.

With reference to your correspondent's present patient, if he will give me the following information I will with pleasure prescribe to the best of my ability. What is its age? Has it moulted? Did it contract the disease during the moult? How long has it been bad? Had it always good health prior to moulting? Is its abdomen at all distended or inflamed? Of what consistency are its droppings—are they small and watery, or loose, copious, and slimy? How has it been dieted? At what temperature is it kept, and say if equal? State its most prominent symptoms?

Asthma at best is a very tedious disease, and especially so in birds, and if this really is the little patient's affliction it will require great care over winter, and should be kept at an even temperature of, say, 60°, and be fed principally on white seed, with occasionally a little brown rape or a pinch of linseed.

As to my remarks respecting *nux vomica*, they are quite in order, and my letter No. 2 is not, as your correspondent says, "faulty in its pathology," in proof of which I beg to submit the following quotations from leading practitioners:—"Probably the best anti-asthma remedy. It is homœopathic to that condition of the digestive system which is the most common cause of the irritation which results in bronchial spasm."—(*Ruddock*). "After the paroxysm subsides, it leaves a condition of the digestive organs for which *nux vomica* is the great remedy. There is often flatulence and constipation; breathing seldom quite right; generally there remains a sort of physical memory of the struggle. No liberties must be taken, either of diet or exercise. Out of this secondary state of bondage nothing will liberate so effectually as *nux vomica*."—(*Russell*).

Your correspondent is apparently unaware of the sympathy existing between the respiratory and digestive organs; for instance, in consumption amongst the chief symptoms are "impaired digestion," and sometimes "gastralgia," and the influence of the latter organs is so great that an "irritable mucous membrane will hurry tubercular deposit through its stages, while a healthy digestive apparatus may prolong the stages indefinitely."—(*Ruddock*). Under the heading of causes of asthma I find the following:—"Irritation of the nerves of respiration, resulting in most cases from deranged digestion, from the inti-

mate nervous connection existing between the digestive and the respiratory organs. After it has once occurred, asthma is easily reproduced by indigestion."—(*Ruddock*.) I therefore infer that the "particular" condition of the digestive organs which is conducive to asthma is an irritable state of the mucous membrane. For further information respecting the uses of *nux vomica* I must refer "*Tai-koong-soo*" to his *Materia Medica*; I trust, however, that the foregoing is sufficiently explanatory. As to his little patient, until I hear further I would recommend the following treatment if yet ill—viz., one drop of aconite in its water, for, say, one or two days, or aconite and *ipeacacuanha* on alternate days, and after missing a day give *nux vomica* for a couple of days, and then a single dose of sulphur after missing a day. After it is relieved, it is only necessary, in a chronic disease like this, to give a single dose of a suitable remedy when there is a slight return of the symptoms. I think this course, unless the bird is too far gone, should with care and attention keep it right over winter, after which the slight remaining symptoms will probably cease entirely.

I had a slight case in January last, but got the bird, a hen, tolerably well by breeding time, when unfortunately she had a severe inflammation of the intestines, with a return of her old symptoms, which caused me some trouble for a few weeks, but after a course of medicine which included *mercurius* and *arsenicum* she came round sufficiently to breed, and reared me eight young birds, with one of which I recently secured a prize. She has now moulted clean, and is as healthy a bird as one could wish to see. The same bird, when about two months old, had a severe attack of inflammation which, thanks to the old system, lasted six or seven weeks: she was so bad, indeed, that a friend estimated her worth at 2*d*. I trust, therefore, that "*Tai-koong-soo*" will persevere not only in practice but in theory, for I can assure him if he do that, ultimately, in spite of disappointments like the present, he will succeed, as I and several others have done. I may tell him that I am not at all singular in my opinions, for they are shared by several fanciers in my neighbourhood; indeed, I know one in particular who has recently secured prizes for a very fine Marked Jonque Mule, which, but for my homœopathic treatment would, at the early age of five weeks, have been rendered, by a very severe form of inflammation, a thing of the past.—*FRINGILLA CANARIA*.

BEES AND HONEYCOMB AT AGRICULTURAL SHOWS.

As exhibitions of hives and supers are becoming more common and likely to become pretty general at our agricultural shows, it appears desirable for bee-keepers of intelligence to suggest and discuss the points of excellence which should guide the judges in awarding prizes. In this, as in most other things, wisdom will come out of a multitude of counsel. If opinions be calmly and publicly given by honest and competent persons, we may soon arrive at and stand on a platform of rules and regulations which may do much to extend and advance bee-culture in England.

In this neighbourhood prizes are offered for the best collections of bees, and for honeycomb, but the whole thing is so indefinite, and the judging so uncertain, that I question if any good results can come out of such exhibitions and competitions as are seen in the neighbourhood of Manchester. My object in this paper is to stimulate attention and discussion on this subject, and to offer a few suggestions. Suppose we make four classes, and three prizes in each class.

1. For the best, second best, and third best hive, with or without bees, £3, £2, £1.
2. For best, second best, and third best swarm of the current year, £2, £1, and 10*s*.
3. Prizes of 30*s*. 20*s*., and 10*s*. to be given for supers of honeycomb of current year's build.
4. Prizes of £3, £2, and £1 to be offered for ornamental hives of wood and glass.

In judging fruit, say grapes, the flavour, colour, size of bunch and berry, bloom and finish, have to be examined and considered: so in judging hives, many points should be considered—viz., the weight and value of the contents, youngness, or virginity of combs, cheapness and materials of hives, simplicity and neatness of appearance.

For the weight or value of the contents of hives competing in the first class I would give three marks, for virginity of combs two marks, for cheapness of hives one, and for simplicity and appearance one mark.

In the second class, swarms of the current year, the combs would be of course all young, and therefore the value of the contents and the cheapness and neatness of the hives only would have to be considered. In both the first and second classes the excellence and value of the contents, not the cost and appearance of the hives, would command the prizes. Thus the tax so often put on poverty would be removed, and cottagers, whom we wish to encourage and elevate, would frequently come to the front and carry off the honours.

In judging the supers the weight and purity of the honey, finish and appearance of the combs, should be carefully examined. The judges should be allowed to taste the honey. In this class, too, cottagers would have a fair opportunity of coming to the front.

We now come to the ornamental hives of wood and glass. It is this kind of hive which is most interesting to visitors at such exhibitions. It is quite certain that our amateur friends who invariably carry off the prizes can, if they like, produce and exhibit something far more ornamental and pleasing to look on than their present heavy, clumsy, flat, squat, bar-frame hives. Such ornamental hives are not kept for profit, but to please the fancy, and therefore in judging them, the weight or value of the contents should not be so highly estimated as the symmetry, elegance, and transparency of the hives. It is, of course, understood that the bees are exhibited in these ornamental hives.

I omitted to state that I think supers filled, or partially filled, on the hives competing in the first and second classes might be exhibited on them and be considered part of them.—A. PETTIGREW, *Priony Vineyard, Sale, Manchester.*

MR. PETTIGREW'S SYSTEM.

"E. F. G. T." upholds Pettigrew's system upon the strength of his having obtained 100 lbs. of honey from only four hives. His results are not very encouraging to the would-be followers of any new system, for they are not greater than those obtained from the regular cottagers' straw hive in a moderate season and locality. I have obtained 114 lbs. from one such hive this year by the addition of a nadir and super, and have left the bees sufficient store for the winter, and a writer in the *English Mechanic* tells of supers of honey 109½ and 112 lbs. in weight.

Mr. Pettigrew's system merely consists in the using of straw hives of large size and dense population. The system may be mine or anybody's, as I know several bee-keepers who have advised and practised such a course before Mr. Pettigrew's book was written. I know one man, a bee-keeper of thirty years, who uses very large straw hives, and it is not uncommon for him to stock them with three or four swarms united by him on the day of swarming.

We bee-keepers of the present day want to advance and emulate our Yankee cousins in the tremendous harvests they obtain from their apiaries, and not go backwards till we obtain the misnamed splendid returns of 25 lbs. average per hive of the Pettigrew system. To advance we must adopt the bar-frame hive and the honey-slinger, which practical experience has proved so remunerative across the Atlantic. I fully intend sending for a "slinger" from one of the Cincinnati firms, and hope to report to you next autumn my experience of its use, as a means of increasing the honey harvest in this country.—R. SYMINGTON, *Ovendon, Market Harborough.*

OUR LETTER BOX.

OXFORD POULTRY SHOW.—We have received the following from Messrs. Bellingham & Gill:—"The second prize for Game Bantams is printed as having been won by H. C. Herieff, but we have the prize card, and the same is marked with the number of our pen, 363, whereas Mr. Herieff's pen is 356. On referring to the printed list of awards supplied by the Secretary of the Show we find that the second prize is awarded to pen 325, no such number existing in the class; 344 or 345 being the first and 380 the last. So that the mistake has arisen by the last two figures in 325 (our pen) being transposed." [We have printed the awards according to the printed list we received.]

BRAHMAS AND CRÈVE-CŒUR HENS (Z. J. X.).—The latter would not have any influence.

LIGHT BRAHMAS.—L. H. Ricketts, Esq., Elmhurst, Banwell, Somerset, wishes "F. S. F." would write to him and say where a letter could be directed to him.

EXHIBITING BANTAM COCK UNDEBLED (Black Red).—There is little hope of success for a Game cock, whether Bantam or not, if it is not dubbed. The operation should be performed as soon as the comb is developed, and the bird is full grown—i.e., as soon as the scaffolding is up, but before it fills out and becomes furnished. The bulk, squareness, and weights continue long after height and length of limb have ceased.

BREEDING LIGHT BRAHMAS (Light Brahma).—If your pullet has yellow feathers she is disqualified. If the tint is only cream-coloured she is not, but she would be defeated by any pullet equally good in other points and lacking this colour. We have seen it in the best strains, both homebred and imported. You run no risk (if it is only the cream colour) in breeding from her if you put her to a cock with a clear white body feather. If the feather is buff you must not breed from her.

PLUMAGE OF THE ROBIN (Jenny Wren).—Both male and female have red breasts, but that of the female is rather paler than that of her mate. Both have their "scarlet waistcoat" throughout the year. We hope you are not deceived by the popular verse—

"Cock Robin and Jenny Wren,
Are their Creator's cock and hen."

The Wren is a totally distinct species of bird.

SKELETONISING LEAVES (Subscriber).—We know of no book upon the subject. We believe that this may be most readily effected by soaking them in a weak solution of chloride of lime, or bleaching powder; but the usual mode of reducing a leaf to a skeleton is by subjecting it to slow decay. The leaf of the birch, which has two layers of nerves, gives a very beautiful skeleton; but that of the orange, which has three layers, is the most exquisite we have ever

seen. The process of reducing them to a skeleton is very simple. Select perfect leaves, and put them in a pan of very hot water, about 200°; let them remain in this for a fortnight or three weeks, without changing the water; take them out, and, if sufficiently softened and decayed, place them one at a time on a flat board, holding the leaf by its stalk, and drawing the edge of a knife gently over the upper surface of the leaf. If this is decayed sufficiently, the skin, or the chief part of it, will come off easily. Then turn the leaf, and take off the skin from that side in similar manner. The skin being off from both sides, wash out in clear water the pulpy matter remaining among the nerves, and the skeleton will be produced. If the skin does not readily leave the surface of a leaf it has not been a sufficient length of time in the water. Some leaves will not bear the water in which they are put being very hot, and the only advantage is that it hastens the progress of decay. For the same purpose the pan of water should be kept in a closet or elsewhere, at a temperature of about 70°.

METEOROLOGICAL OBSERVATIONS, CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	A.M.		IN THE DAY.									
			Thermometer.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Temperature.		Radiation Temperature.		Rain.	
	1872.	Oct.	Barom. at High and Sea Level.	Dry. Wet.			Max.	Min.	In sun.	On grass.		
We. 30			Inches.	deg.	deg.		deg.	deg.	deg.	deg.		In.
Th. 31			29.64	56.5	54.3	S.E.	49.4	57.3	45.6	38.0	45.5	0.492
Fr. 1			29.64	58.8	48.7	W.	50.8	55.6	48.0	64.2	47.8	—
Sat. 2			29.73	48.0	35.9	S.W.	49.4	58.4	43.0	58.8	38.3	0.130
Sun. 3			29.42	49.7	46.9	S.W.	49.3	53.0	44.8	51.7	45.0	0.201
Mon. 4			29.7	49.8	44.1	W.	49.2	58.6	41.5	56.1	55.5	—
Tu. 5			29.113	41.0	42.2	S.W.	47.2	55.2	35.3	64.0	32.0	0.400
Means			29.718	52.4	48.6		49.1	53.5	43.1	74.6	41.3	1.222

REMARKS.

30th.—Wind and rain during the night and wet morning; very dark between 2 and 3 P.M., followed by heavy rain, then bright for a short time; wet afternoon and evening.

31st.—Very dull morning, but soon cleared, and was a fine and pleasant day.

Nov. 1st.—Rather hazy in morning, but beautifully fine after 11 A.M. P.M., when it clouded over; several showers before 8 P.M., when it was fine.

2nd.—Fine early; rain at 9 A.M., continuing for about an hour, then fine; but several sharp showers during the afternoon, evening, and night.

3rd.—A fine and pleasant day, clouding over once or twice, but no rain.

4th.—Fine, but hazy early, then very fine for a while, but clouding over, and rain beginning about 4.30 P.M., and continued occasionally all the evening, sometimes very heavily; but fine night.

5th.—Dull morning; very bright in the early afternoon, but only continuing so for an hour or so, then very dull though no rain fell.

Another wet, warm, and muggy week, temperature (owing to S.W. winds) rather higher than last week, and about 4° above the average. The third consecutive week in which upwards of an inch of rain has fallen, the amounts being 1.695, 1.785, and 1.232 respectively, making 4.702 for the three weeks.—G. J. SYMONS.

COVENT GARDEN MARKET.—NOVEMBER 6.

QUITE a stagnation in business, with which the present wet weather has a great deal to do; the growers not being able to do the usual amount of work on the ground, and buyers limiting their operations to immediate wants. A parcel of good American New Town Pippins is to hand this week, and a fair average supply of continental goods.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	½	sieve	8	0 to 5 0	Mulberries.....	½	lb.	0	0 to 0 0
Apricots.....	doz.	0	0 0 0	Nectarines.....	doz.	0	0 0 0		
Cherries.....	per lb.	12	0 20 0	Oranges.....	½	100	10	0 20 0	
Chestnuts.....	doz.	12	0 0 0	Peaches.....	doz.	0	0 0 0		
Currants.....	½ sieve	0	0 0 0	Pears, kitchen.....	doz.	1	0 3 0		
Black.....	do.	0	0 0 0	dessert.....	doz.	2	0 4 0		
Figs.....	doz.	0	0 0 0	Pine Apples.....	½	lb.	4	0 8 0	
Filberts.....	lb.	1	0 1 6	Plums.....	½	sieve	6	0 9 0	
Cobs.....	lb.	1	0 2 0	Quinces.....	doz.	1	0 2 0		
Gooseberries.....	quart	0	0 0 0	Raspberries.....	lb.	0	0 0 0		
Grapes, hothouse.....	lb.	2	5 0 0	Strawberries.....	½	lb.	0	0 0 0	
Lemons.....	½ 100	0	10 0	Walnuts.....	doz.	15	0 30 0		
Melons.....	each	2	0 5 0	ditto.....	½	100	3	0 0 0	

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	doz.	2	0 to 4 0	Mushrooms.....	pot	1	0 to 3 0		
Asparagus.....	½ 100	0	0 0 0	Mustard & Cress.....	punnet	0	2 0 0		
Beans, Kidney.....	½ sieve	0	0 0 0	Onions.....	½	doz.	0	0 0 0	
Broccoli.....	doz.	0	0 0 0	Pickling.....	quart	0	6 0 0		
Beet, Red.....	doz.	1	0 3 0	Parsley per doz. bunches	2	0 3 0			
Broccoli.....	bundle	0	9 1 6	Parsnips.....	doz.	0	9 1 0		
Cabbage.....	doz.	1	0 1 6	Peas.....	quart	0	0 0 0		
Capsicums.....	½ 100	2	0 3 0	Potatoes.....	doz.	3	6 5 6		
Carrots.....	bunch	0	6 0 0	Kidney.....	doz.	0	6 0 0		
Cauliflower.....	doz.	2	0 4 0	Round.....	doz.	0	0 0 0		
Celery.....	doz.	1	6 2 0	Radishes.....	doz.	1	6 0 0		
Coverts.....	doz.	2	0 3 0	Rhubarb.....	doz.	0	0 0 0		
Cucumbers.....	each	0	3 1 0	Salsafy.....	½	bundle	0	9 1 0	
pickling.....	doz.	0	0 0 0	Savoy.....	doz.	0	0 0 0		
Endive.....	doz.	2	0 0 0	Scorzoneria.....	½	bundle	0	9 1 0	
Fennel.....	bunch	0	5 0 0	Sea-kale.....	doz.	0	0 0 0		
Garlic.....	lb.	0	6 0 0	Shallots.....	lb.	0	3 0 0		
Herbs.....	bunch	1	6 2 0	Spinach.....	doz.	1	0 0 0		
Horseradish.....	doz.	0	4 0 0	Tomatoes.....	doz.	1	0 2 0		
Leeks.....	bunch	0	2 0 0	Turnips.....	bunch	0	3 0 0		
Lettuce.....	doz.	0	9 1 0	Vegetable Marrows.....	doz.	0	0 0 0		

POULTRY MARKET.—NOVEMBER 6.

THE supply is good, and the trade dull.

WEEKLY CALENDAR.

Day of Month	Day of Week.	NOVEMBER 14—20, 1872.	Average Temperature near London.			Rain in 43 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m.	h.	m.	h.	Days.	m.	s.
14	Th		48.5	33.8	41.2	21	18	af 7	10	af 4	13	15	20
15	F	Eclipse of the Moon.	49.0	34.8	41.9	19	20	7	9	4	13	15	20
16	S	Mentzel died, 1701.	48.9	33.2	41.0	14	22	7	7	4	15	14	59
17	SUN	25 SUNDAY AFTER TRINITY.	48.1	33.9	41.0	19	23	7	6	4	16	14	47
18	M	J. Camerarius born, 1665.	47.9	32.9	40.4	20	25	7	5	4	17	14	34
19	Tu	Entomological Society's Meeting, 7 P.M.	48.9	33.5	41.2	17	27	7	4	4	18	14	21
20	W	St. EDMUND.	48.7	34.6	41.7	14	29	7	3	4	19	14	6

From observations taken near London during forty-three years, the average day temperature of the week is 48.6°; and its night temperature 33.8°. The greatest heat was 61°, on the 20th, 1866; and the lowest cold 18°, on the 15th, 1848, and 19th, 1868. The greatest fall of rain was 1.24 inch.

WALL COPINGS.



WHERE evidence required to prove how little the value or philosophy of wall copings is understood, the want of replies to Mr. Bartrum's very pertinent questions on page 109 would be ample. Yet the plan is "old as the hills," and is noticed in almost all standard works on horticulture, but in none of those to which I have been able to refer does there appear any grasp of its real importance. Temporary copings

are recommended to protect the blossom in spring; after this object is effected, it is invariably advised that they should be taken down, as they are supposed to obstruct the light, air, and rain necessary to the health of the trees.

The object of this paper is to show the error of this reasoning, as well as to draw attention to the value of permanent copings; and I may here observe that my assertions are founded upon no mere theory, or even entirely upon the results of my own practice, but upon the broader basis of extensive observation, and the remarkable success attending the application of this plan for a long course of years by my father in the gardens of the Earl of Romney.

It may be well to describe this coping once more, for I have seen none better, and it has the desirable qualities of simplicity, cheapness, and durability to recommend it, as I can venture to do most strongly to anyone who may be induced to adopt it. The coping, then, is of elm boards, each 21 feet long, 15 inches wide, and 1 inch thick; it is fixed at right angles to the wall, and is level with its top. The ends of every two boards are made to lap over each other, and are bolted together on to a stout iron bracket, which is made to fit to the wall, passing over the top downwards into a couple of staples driven in behind. The middle of each board is fastened to another bracket in a similar manner, and the coping is thus kept securely in position without any risk of damage from high wind. At the time it was put up it was calculated to cost 1s. per foot run, including the painting, but exclusive of the cost of the timber, which was grown upon the estate. This coping answers so admirably that the trees which it protects rarely fail to produce an abundant crop of fruit; and the fact of the trees, especially the Peaches and Nectarines, having ripened a full crop of even more than average excellence in the present season, disastrous as it has so generally been, not only to the fruit, but in many instances to the trees themselves, is a greater evidence in favour of the system than anything one could say.

Turning now to the consideration of the value of copings as a means of protection, it may be asked, Does a Peach or Nectarine require protection only for its blossom? for such appears to be the general opinion. To this I may very safely venture to reply that the foliage is equally tender and equally requires protection; so also in a measure does the wood, especially during

the growing season when the sap is in full flow, and the cuticle is so tender as to be susceptible of harm from any excessive lowness of temperature: hence the so-called mysterious canker, which has caused such an outcry from those persons on whose young trees, when apparently in full vigour, branches have withered and died, simply because the tissue of the frost-bitten bark has ceased to exercise its functions. It is most probable that the trees sustain this injury from early autumnal frosts, especially in low-lying ground where the temperature has a great range; but places considerably elevated are by no means exempt. In the kitchen garden here, at an elevation of 460 feet above the sea level, the thermometer registered 4° of frost at 6 A.M. on September 22nd; it was equally cold on the following morning. On October 12th the frost was very severe, the thermometer falling to 26° in the kitchen garden, and to 24° in a valley about 100 feet below the garden level. It is worthy of note that at the observatory at Crowborough, which is the highest point of the Forest Ridge, and is upwards of 800 feet above the sea level, no frost occurred on either of the above dates. More rain falls in October than in any other month, and when its frequent storms alternate with sharp frosts, it is reasonable to suppose that tender vegetation—under which category the Peach and Nectarine may justly be classed—is liable to suffer in proportion to its state of exposure.

These few statistics are given to show the necessity for a coping to protect the foliage and bark from autumnal frosts when the wood is still green, tender, or unripe; but there is another property which must not be lost sight of, and that is its great value as an absorbent and radiator of heat, and as preventing the escape of heat radiated from the wall, thus contributing very materially to the ripening process, of so much importance to the young growth.

To the oft-repeated argument that it is necessary to remove the coping during summer in order that the trees may enjoy the full benefit of light, air, and rain, I reply that a permanent coping projecting at right angles from the wall, instead of being hurtful to the trees is of the greatest use; for, as was stated at page 1 of the present volume, by slightly shading a few inches of the part immediately beneath, it acts as a check upon the tendency to excessive vigour in the highest branches, common to all trees; thus the sap is more evenly distributed; the growth near the base of the tree, instead of becoming bare and old, is constantly renewed, and, consequently, fruit is so freely produced that there is no wasted space in any part of the tree.

To render these notes as clear and practical as possible, it may be stated that—

1. A coping should be of boards 15 inches wide by 1 inch thick.

2. It should have no slope, but should project its full width at right angles to the top of the wall, and should be bolted securely to stout iron brackets, so fastened to the wall as not to interfere with the growth of the branches it is intended to protect.

3. It should be a permanent fixture, because

4. It screens the trees from the hurtful effects of early and late frosts; it checks radiation, and by preventing the usually excessive flow of sap to the extremities of the higher branches, it serves admirably to secure that equal distribution of vigour in all parts of the tree which it is the aim of good cultivation to insure.

With regard to the exclusion of light and rain, no coping that I have seen would do this to a hurtful degree; it is only a very broad, sloping, roof-like coping that could do so. The careful and really earnest man never depends entirely upon uncertain showers to cleanse the foliage of his trees; his eye and hand are constantly on the alert examining every part of them, and all wants are seen, or rather anticipated, and promptly cared for; nothing is left to chance: hence the coping should be strictly regarded as a valuable aid to successful culture, of which the gardener gladly avails himself, and while it is incapable of harm it is at all times a safeguard, screening the trees from many climatic influences that frequently prove hurtful and even fatal to others left fully exposed to their baneful effects.—EDWARD LUCKHURST.

THE CULTURE OF THE GLADIOLUS.

So many and such able correspondents have written upon the culture of the Gladiolus that it may seem there is nothing more to be said on the subject; but as I have now grown it probably as long as any amateur in the kingdom, and have tried it on various soils, besides having seen the gardens of other growers, I may perhaps be enabled to add something to the general fund of information that has been brought forward.

When (now a good many years ago) the Gladiolus came prominently into notice through the efforts of Mr. Standish, then of Bagshot, who with his usual zeal was engaged in hybridising it, it was considered that it could not be grown in too poor a soil, and the advice was given that if the soil was not poor enough it had better be charred, or burnt to make it so; but experience proved this to be unsound, and a rich soil is now considered by no means unsuitable—indeed, I believe the Gladiolus may be successfully grown in any soil. Certainly a stiff tenacious loam does not suit it, but there are means of making this lighter; and although it would involve a greater amount of labour, yet no lover of the flower would grudge this to overcome any difficulties in the way of growing it. The soil which M. Souchet declares best suited for it is that which is commonly known as a good market garden soil, neither too stiff nor too light. Mr. Youell, of Great Yarmouth, used to exhibit some splendid specimens of Gladiolus *branchleyensis* which were grown in a soil somewhat similar to the Dutch bulb gardens about Haarlem—rich friable soil at top and cool underneath; and such a soil, where springs were not far off, would seem to be the most congenial for it. After all it is not very particular, and provided that it is not grown in the same place year after year, and does not come into contact with fresh manure, no soil seems unsuitable to it. Lord Hawke, who so successfully exhibited this year, made his beds with slush from the bed of the Trent, which he had carted at considerable expense, and nothing could have been finer than some of his flowers; and as it is an Iridaceous plant I can imagine it growing well in such a soil.

It is desirable that the beds be in a sheltered, not shaded position, for owing to the character of its growth it affords a good hold to the wind, and unless the spikes are secured they will suffer considerably from it. I make my beds about 4 feet wide, so that it is easy to get at any of the plants, and I plant four rows in a bed. It is generally recommended to plant a foot apart in the rows, and where space is no consideration it may be done, but I do not see the necessity for so doing. The roots do not spread, and hence 8 inches apart would, I think, be ample. M. Souchet plants his even closer than this, and I have seen as fine blooms with him as have ever come under my notice; finer I cannot say, because I think nothing can surpass the flowers that have been exhibited at our metropolitan shows the last two years.

There are two ways of preparing the beds, both of which I have adopted, and I cannot say that I have perceived any difference in the results, while one is attended with more trouble than the other. One plan is to excavate the beds to the depth of 9 or 10 inches, place a layer of well-rotted cow dung about 4 inches thick at the bottom, and then return the mould; and as the bulbs are planted at about 4 inches deep, there will then be 4 inches between the base of the bulbs and the manure.

The other plan is to place some well-rotted manure on the bed and then dig-in deeply, or, indeed, as some do, to trench the beds. November is about the best time for this operation. They can then have the benefit of the winter frost; and, indeed, during severe weather it is better to turn up the surface roughly, so as to give them all the benefit of its sweetening power.

The time for planting will vary according to the situation. There is at least a fortnight's difference in the period of blooming between the north and south of England, and about ten days between the south of England and Paris. At Fontainebleau from the 5th to the 15th of August is the length of the blooming; with us from the 15th to the 30th, and in the north of England from the 25th of August to the 7th of September, as far as I can judge. I generally plant between the 2nd of March and the 10th of April according to the character of the weather, being never in a hurry to plant before the first-named day, and ready to seize any fine weather after it. It is very undesirable with it, as with any bulb or plant, to place it in the ground when the soil is "stodgy."

In planting, I take out with a good deep trowel the soil to the depth of 6 or 7 inches, and make a hole about 5 inches across; this I fill with a mixture of sand, powdered charcoal, and light soil in about equal proportions, so that the bulb, when it begins to start and throw out its rootlets, has a light and dry material into which to penetrate, and thus is likely to be saved from rotting. When I have one row finished I cover up and commence the second, placing a label to each sort, and writing the beds in my garden book, so that if the label goes wrong I am not at a loss, while the presence of the label enables me to tell the sort without having to refer to my book.

The nature of the plant necessitates in dry weather a great amount of watering, and happy are they who have good soft water. Here mine comes from the chalk, and so impregnated is the water with it, that my kitchen boiler, which I had cleaned out the other day, had in it a deposit of lime in some parts more than an inch thick. I believe this to be injurious to the bulbs. Certainly this year, when I had but little watering to do, they have been better than during the dry seasons we have had, and when I had to water I had plenty of rain water to go to. My paper warns me that I must stop, and hope to continue next week and to enter on the vexata questio of the disease.—D., Deal.

CULTURE AND MANAGEMENT OF POTATOES.

HERE (Dorset) the Potatoes in my gardens were but little diseased. I have been offered a guinea a-sack for them. I hear the dealers are buying up Potatoes for 10s. per sack. I began planting last autumn on October 24th, and mainly ended on November 15th. This autumn I commenced planting October 28th, and shall continue, weather permitting, till I have finished. The object in planting now is not to stop disease, but to save the tubers from growing out in store, which must weaken the seed. I have a right of furzery on Okeford Common: in the spring I had two hundred furze faggots cut, much mixed with rough grass; with this I plant my Potatoes, and it protects the tubers from severe frost. Clean wheat or barley straw will also serve the purpose. Straw laid over the surface will likewise protect them.

I plant the Potatoes whole at 1 foot apart in the row, and 22 inches from row to row. If the tubers are small they are planted 9 inches apart. The larger the tuber the better will the crop be. The sorts I use are early ripeners. I usually get them out quite ripe by August 7th. As soon as the skin adheres to the sides the crop may be lifted, even if the haulm and leaves are green. The sorts I use are all good; they are Rivers's Royal Ashleaf, Veitch's Ashleaf, and Gryffe Castle Seedling, a short-haulmed early ripener—they serve till Christmas—and the Cobbler's Lapstone, and its three congeners, Pebble White, Yorkshire Hero, and Taylor's Yorkshire Hybrid, last till new Potatoes come in.

The late-ripening and long-haulmed Potatoes are usually the greatest sufferers from disease; one-half are destroyed by it, and the other half, being unripe, are uneatable. As soon as the crop is lifted the pig Potatoes and the best of the diseased ones should be boiled-up at once. A little salt might be added. Little or nothing need be lost, as the pigs will eat them.

Addison said, "No one is ever thanked for advice;" I will, however, venture to give some. I know of no remedy for the disease; it seems to be dependant on atmospheric influences and the state of the plant and tubers at the time it sets in.

I have observed that dry summers at the time of maturation are favourable to the Potato; and that this year, following the electrical rains, the wind being north-east, we had several severe hoar frosts just preceding the outbreak. All the remedies proposed have failed; still the following, as practised here, will greatly aid you. Plant early ripeners, and some among them that will keep well till new Potatoes come in. Do not manure the Potatoes, but manure highly the preceding crops. Do not plant at the fall till the ground is thoroughly cooled. If the tubers have started, break off the scions. If the plants appear above ground before spring frosts are over, draw the earth over the plants, or earth them up at once. Started tubers planted in March will be up long before dormant tubers planted in the autumn! The frosts will cut down the plants, and the tubers will be smaller, the crop less, and the ripening a fortnight later. Plant more than you are likely to want. After the crop is lifted you can have a good crop of Early Stone Turnips, some of which will afford you "tops" in the spring before Cabbages come in. I get off my garden three crops in two years. Finally, look over your Potatoes, and remove the decaying or decayed ones.—W. F. RADCLIFFE.

GOLD AND SILVER TRICOLOR AND BICOLOR GERANIUMS.

How beautiful were the Gold and Silver Tricolor and Bicolor Geraniums, with their varied and resplendent colours, as they adorned our gardens in the early summer! and they would have longer continued to do so had it not been for the very unfavourable season. Can anything connected with horticulture be more enjoyable than noting the progress of those interesting subjects?

I had four oval beds; in one containing the Golden class, Prince of Wales took the first place. The style and freedom of its growth and its brilliancy of colour will insure its becoming the most popular of all bedding and show Geraniums. Sir Robert Napier and Lady Cullum must always rank deservedly high. Countess of Craven, Achievement, and Lucy Grieve (the last two slow growers) are all of the rarer kinds that I possess.

I am induced to give my small experience, trusting that among your correspondents some will diffuse their knowledge by giving lists of the best kinds for show and bedding purposes, as well as hints on the situation and compost best suited to develop colouring.

Mrs. Rousby, Miss Burdett Coutts, Italia Unita, and Mabel Morris are very good among the Silver Tricolors. I am aware there are some more highly-prized varieties, but I am not sufficiently acquainted with them.

The Bicolors were not by any means themselves this summer, and although I have a great variety of them, I feel quite incompetent to pass judgment on them. Empress Eugénie is very pretty, but was completely spoiled by the hail and continued rain; St. John's Wood Star, Prima Donna, and Fairy Ring were among the best. The dark ones became too robust, and too yellow as well. Sybil held its ground remarkably well. The fourth oval was entirely composed of Mrs. Benyon and Mrs. Pollock, their high colouring continued longer than in the other three. A large tuft of Pampas Grass in the centre, with an equal breadth of turf between each bed, prevented any appearance of monotony.—AN AMATEUR, *South of Ireland.*

CLARKE'S INSECT DESTROYER.

I SHOULD be glad if you would correct a slight error in a recent number. Instead of 1 oz. of the compound to the gallon, say 3 ozs. to the gallon for a winter dressing, and 2 ozs. to the gallon for a summer dressing. Syringing is the best way to apply it at a temperature of 120°; there is then no danger of injuring the buds.

Three years ago my Peach trees were full of scale; this year I have not seen one. My compound has completely eradicated it, and several other persons who have used it tell me the same. My trees have not required a dressing all the summer; they have not had one since last year's winter dressing; they have only been syringed once a-day with clear water, and I have not observed an insect upon them. By rights they ought to have two dressings in the winter when the leaves are off, one a fortnight after the other. For instance, supposing the first dressing to kill all the scale insects on the trees, in a fortnight or three weeks afterwards the insects will begin to fall off, and the very place where they stuck to the branch no solution or dressing could touch; and if one were to examine

with a microscope the spot whence the scale came off, young live ones would be discovered.—T. C. CLARKE.

LEE'S PROLIFIC BLACK CURRANT.

THIS comparatively new variety is, as it deserves to be, largely advertised in your columns. Last season I wrote favourably on it in the pages of the *Gardeners' Chronicle*. At that time I had only seen it growing one season, and that in the raiser's garden. I have since grown it in the gardens here, and have seen it growing at several other places; perhaps, therefore, you will allow me to state that I can fully endorse the good opinion I entertained of it. Right worthily does it deserve the name of Prolific, for the bushes this season (which, by the way, has been a very unfavourable one for Currants as well as for other fruits in this neighbourhood), were literally smothered with fruit. The bunches are of moderate length, the berries large and very even in size, with scarcely any small ones. They are very sweet, and of an agreeable flavour, without that acidity which makes the Black Currant so unpopular as a fruit for the dessert. Another great recommendation this variety has is its long hanging and keeping properties. Those grown here were planted in a border with several other varieties, and I gathered fruit of Lee's Prolific quite three weeks after that of all the others had either dropped off or shrivelled up. Many new kinds of fruit sent out of late years have caused much disappointment, often turning out to be inferior to older proven varieties, so that cultivators have become wary of what they do purchase; but I have no doubt but all will be pleased with this variety after giving it a trial, as I believe it to be the very best we have in cultivation. I have no hesitation in stating that I think it will, when its merits become better known, be the most popular variety of its class in every garden establishment, more especially with the market gardener.—THOMAS FOOTE, *Gardener to Sir Arthur Elton, Bart., Clevedon Court, Somerset.*

DESTROYING PLANTAINS AND OTHER WEEDS ON LAWNS.

I CAN fully endorse all that is stated by Mr. J. Wright respecting the efficacy of oil of vitriol for eradicating plantain and other weeds on garden lawns; it has been practised here very successfully for several years past. Although the use of the blacking-bottle and notched dip-stick is rather novel, I have no doubt it answers the purpose well. What we use is a small narrow-necked glass bottle similar to the rough sketch enclosed, and such as is used by chemists in laboratories, &c. One may be purchased at any chemist's at a very trifling cost.



If the glass stopper in the side be kept firmly in its place the liquid will only come out by drops, and therefore the operator is not so likely to waste the acid or throw it over his clothes, as would otherwise be the case. If the acid can be procured pure it may be considerably diluted with water, in some cases quite one-half, and it will still be sufficiently strong for all weed-killing purposes.—W. NICHOL, *Drinkstone Park, Bury St. Edmunds.*

SALE OF ORCHIDS.—On the 7th and 8th inst. Mr. Stevens sold by auction Mr. Marshall's, collection of Orchids. There were 555 lots, and they realised more than £1000. *Cattleya Trianae Ruckerii* sold for £7 7s.; *Odontoglossum triumphans Marshallii*, £10 10s.; *Cypripedium grandiflorum*, £8; *Lelia acuminata*, £6; *Masdevallia Veitchii*, £10 10s.; *Angraecum sesquipedale*, £6; *Sobralia macrantha* (Woolley's var.), £12.

HARDY GEMS.—No. 5.

I HAVE followed no systematic plan in my short notices of these plants, preferring to jot down my thoughts and experiences as the ink flows from the pen, so that my readers will have a great variety of both genera and species brought to their notice, somewhat in the manner they are thrown in our way during a botanical ramble; I therefore now ask you to observe those beautiful patches of bright yellow flowers, which are so conspicuous, they are—

ALISSUM ALPESTRE, one of the finest spring-flowering plants known to us. The plant is of dwarf spreading habit; the large dense heads of bright yellow flowers stand up well above the foliage, rendering it very effective. It comes from the Italian Alps.

DRABA VIOLACEA.—This is a truly beautiful plant, offering a great contrast to the majority of the species belonging to this genus of Crucifers. It forms a tolerably dense somewhat hoary tuft, which seldom exceeds 12 or 15 inches in height. The flowers are large, of a soft violet colour, and freely produced in March and April. In addition to its individual beauty it is exceedingly interesting, on account of the great altitude at which it flourishes on the Andes—viz., from 13–15,000 feet, where, however, it is by no means plentiful.

DRABA TRIDENTATA.—A very dwarf plant, and especially valuable in the rock garden, as its brilliant yellow flowers are produced from June to August, and thus it maintains a rich display after the early-blooming members of this family have lost their beauties. Native of Russia.

DRABA AZOIDES.—This elegant native species presents quite a dense mass of bright yellow in April and May. It has a splendid effect in the rockery, and is also valuable as an edging plant for the parterre, where spring bedding is patronised.

DRABA GLACIALIS is another very beautiful dwarf species, growing 4 or 5 inches high. It is dense and compact, producing its gay yellow blooms in April and May. It should be grown in deep sandy loam. Native of the Pyrenees.

NERTEA DEPRESSA.—This charming little plant belongs to the order Cinchonaceæ, and is not introduced here on account of the beauty of its flowers, for they are small and inconspicuous, but these small blooms are succeeded by a profusion of deep orange-coloured berries about the size of a large pea, which, contrasted with the deep green of the leaves, render it a lovely object on a rockery. The plant is dwarf and compact, forming handsome little rosettes. It is from the antarctic regions, and is reputed to be the southernmost member of the order.

SPEREA PALMATA.—Beyond doubt this is one of the very best herbaceous plants which have been introduced from Japan. It attains a height of about 2 feet; the leaves are large, deep green, and palmately lobed, the stems and branches being reddish purple. The flowers are produced in terminal corymbs, and are rich crimson, shading off to rosy purple. It blooms profusely throughout June and July, forming a delightful ornament either in the garden or when used in vases for the decoration of apartments, a purpose for which it is admirably adapted.—**EXPERTO CREDE.**

REPORT ON GARDEN PEAS.—No. 1.

DURING these twenty years the numerous names that have been given to the different varieties of Peas have been most puzzling, and have led to great confusion. A variety of great excellence is allowed to degenerate, and in due course it gradually becomes like anything but what it originally was. Some grower has been careful to keep his stock very select, and finding in time that it is much superior to the degenerated one which is in general cultivation, he concludes that he has secured something new, and presently announces it to the world under a new name, and at a high price. But it is the old variety notwithstanding. It is generally the best varieties that are liable to this, and we have seen crops of what were called Champion of England and Ne Plus Ultra, which resembled these only in name, while the true varieties were growing alongside under their new designations.

It is, therefore, for the purpose of attempting to bring order out of confusion, and of placing on record the true characters of all the varieties, that I have undertaken for the third time during the last twenty years to report on the subject. In this I have combined all the former reports, so as to make the subject as complete as possible.

I.—FRAME PEAS.

DILLISTONE'S EARLY (*Carter's First Crop*; *Sutton's Ring-leader*; *Clarke's Rapid Prolific*).—The plant is of a slender habit of growth, producing a simple stem 2 feet high, bearing on an average from seven to nine pods. These are generally single, but occasionally in pairs, almost straight, and containing seven peas in each. The ripe seed is small, smooth, and white.

This is the earliest of all the white-seeded Peas, and, with the exception of Mr. Laxton's Harbinger, is the earliest known. When this variety first appeared, twelve or fourteen years ago, and before it had been allowed to degenerate, it was far in advance of every other variety. Sown on the 19th of February, the plants were a mass of bloom on the 19th of May. On the 5th of June the blooms dropped and the slats appeared, and on the 22nd of June the whole crop was ready to be gathered. At that period it was quite seven to eight days earlier than a perfectly pure stock of Sangster's No. 1, which up to that time had been regarded as the earliest of all. A striking feature of Dillistone's Early is, when pure, that the plants are all of a uniform height, they bloom in a mass, the pods all appear together, and the whole crop is ready to be gathered at the same time.

SANGSTER'S No. 1 (*Daniel O'Rourke*; *Carter's Earliest*; *Dickson's First and Best*; *Sutton's Champion*; *Sutton's Improved Early Champion*; *Dickson's Climax*; *Washington*; *Isherwood's Railway*; *Early Caractacus*; *Taber's Perfection*; *Hooper's Early Rival*).—This variety is of a slender habit of growth, more so than Early Emperor, and consists of a single stem 2 feet high, producing, on an average, from eight to ten pods on each plant. Pods generally single, but frequently in pairs, 10½ inches long, and upwards of half an inch wide, quite straight, thick, and plump, and terminating abruptly at the point. When fully grown they become much swollen, broad in the back, and somewhat round or quadrangular. They contain, on an average, seven, but frequently eight, peas. The ripe seed is white. This and Waite's Daniel O'Rourke were sown in adjoining rows 5th of April, 1853, and came into bloom on the 5th of June; on the 9th the first blooms began to drop, and the slats (young pods) to appear; by the 22nd the whole plants were nearly out of bloom; and on the 1st of July the pods were quite filled and ready to gather. I was most particular in my observation of these two varieties, as it had been said by some that they are distinct. That there should be no mistake I procured Sangster's No. 1 from Mr. Sangster, and Daniel O'Rourke from Mr. Waite. They were sown on the same day, came up on the same day, slatted on the same day, podded on the same day, and died-off on the same day, after having attained the same height, and presented the same habit of growth. This is a very valuable Pea. It is not so tall by some inches as Emperor, stops growing and blooming much sooner, and is ripening-off when Emperor is still fresh and growing. In this respect it is very valuable to the gardener, as it enables him, after obtaining a prolific crop of early Peas, to clear the ground for something else. It comes into use seven days later than Dillistone's Early, and matures its crop more slowly.

EARLY KENT (*Early May*; *Prince Albert*).—The true Early Kent is now almost, if not quite, out of cultivation, and deservedly so, its place having been occupied by Dillistone's Early, a more prolific and an equally early Pea. It is of a very slender habit of growth, and rarely more than 2 feet high, producing a scanty crop of small ill-filled pods. Its only recommendation, even in its best days, was its earliness. It was this variety which was formerly grown extensively at Higham, in Kent, a very early locality, from which the first Peas of the season came into the London markets.

TAYLOR'S PROLIFIC.—The pods are all strictly single, and are of the size and shape of Sangster's No. 1, containing on an average from six to seven peas in each. The plant is 2 feet high, and produces perfect pods even to the top of the haulm, when the whole ripen-off simultaneously. Taylor's Prolific seems to be a very superior variety of the old Early Kent, from which it has, no doubt, originated.

EARLY EMPEROR (*Early Sebastopol*; *Morning Star*; *Rising Sun*; *Warner's Conqueror*; *Warner's Emperor*).—Plant of a slender habit of growth, always with a single stem, which is 2½ to 3 feet high, and produces from eight to ten pods on each plant. Pods generally single, but frequently in pairs, from 2½ to 3 inches long, perfectly straight, and terminating abruptly at the end. They are well filled, and contain from five to seven peas, which are roundish and flattened, seven-twentieths of an inch long, six-twentieths broad, and the same in thickness. The ripe seed is white.

The seed was sown on the 5th of April, 1851, and the plants came into bloom on the 5th of June; the blooms began to drop



Draba azoides.

on the 9th, and on the 1st of July the pods were completely filled and ready to gather.

RUELE MICHAUX.—This is a French variety, and is a very inferior stock of Early Emperor, having short broad pods, and coming into use at the same time.

DANECROFT RIVAL (*Girling's Pea; Glass Pea*).—In habit of growth, height, and productiveness, this closely resembles Early Emperor, but it can be easily distinguished from that and every other variety by the total absence of glaucousness or bloom on the leaves, which gives it a singular and sickly appearance. The plant is remarkably tender. It is now preserved only in the gardens of the curious, where it is grown more for its singular appearance than for any great merit it possesses. This was raised about thirty-five years ago by Mr. Girling, of Stowmarket, but it is not now worthy of cultivation.

SUTTON'S EARLIEST OF ALL.—This is evidently an inferior form of Danecroft Rival. It has the same habit of growth, and, like that variety, is destitute of the glaucousness which all other Peas possess; the pods are smaller, and though it comes into flower two days earlier, it is fit for use at the same time, being four days later than Dillistone's Early, as proved in the trial of Peas at Chiswick, 1872.

BECK'S GEM (*Tom Thumb; Turner's Royal Dwarf; Nain hâtif extra; De Grace*).—This is the most dwarf-growing of all the varieties. It rarely ever exceeds a foot in height; the stem is of a stout habit of growth, and branches at every joint to within three or four of the top, producing from fourteen to eighteen pods. The pods are almost always borne in pairs, rarely singly, and are produced at every joint, particularly towards the top; they are smooth, of a dark green colour, and well filled, containing from five to eight peas, which are almost as large as Imperials. The ripe seed is somewhat ovate, and of a greyish pearly colour.

This is a very excellent Pea for forcing, and for early sowing under walls or other shelter. It is remarkably prolific, and cannot but be of great use in small gardens where sticks cannot be conveniently obtained or made use of. This ripens at the same time as Early Emperor.

TELEGRAPH.—This is in every respect, as regards habit of growth and general appearance, similar to the Early Emperor, and differs from it in the ripe seed having a black hilum like the Egg Pea. It also partakes of the character of the Egg Pea in flavour, having the rough Bean-like taste which is remarkable in that variety. It produces, on an average, five to eight pods on a stem, and these contain from seven to eight peas. Sown the same day, it ripens two days later than Early Emperor. The variety is not worth growing.

EARLY RINGWOOD (*Ringwood Marrow; Flanagan's Early; Beck's Marrow; Essex Rival*).—This produces a very large well-filled pod, and is a most abundant bearer; but it has a peculiarity, which, by some, is considered an objection, from the pod being white instead of green, and presenting, when only fully grown, the appearance of over-maturity. This objection, however, is chiefly taken by those who grow it for market, and who find a difficulty in convincing their customers that, notwithstanding the pod being white, it is still not over-ripe. So far from being soon out of season, the Ringwood Marrow retains its tender and marrowy character longer than many other varieties.

Plant with a moderately vigorous habit of growth, producing a stem which is $3\frac{1}{2}$ to 4 feet high, and always simple, except in wet seasons, when it makes a second growth by throwing out shoots from near the ground. The lowest pods are within about a foot of the ground, and are produced at every joint, even to the extremity, the whole number on each plant being from ten to twelve. The pods are single and in pairs, in about equal proportions, from 3 to $3\frac{1}{2}$ inches long, and six-tenths of an inch wide, slightly curved and waved on the upper margin, and terminated rather abruptly at the point. As they ripen they become thick and fleshy, with a rough, pitted, and shrivelled surface. They contain from six to seven large peas, which are roundish and not compressed, about nine-tenths of an inch long, seven-tenths wide, and the same in thickness. The ripe seed is white. It comes into use six days later than Sangster's No. 1.

EARLY WARWICK (*Racehorse; Essex Champion*).—What is now grown under the name of Early Warwick is very different from the variety to which the name was originally applied. When first obtained at Evesham, in Warwickshire, it was a single-blossomed Pea, and somewhat earlier than the double-blossomed Frame of those days, but it gradually lost its single-blossomed character, and has now become identified with the ordinary Early Frames.

EARLY FRAME.—In adopting the name "Early Frame," I mean to include all the forms known under that name, whether they are called single or double-blossomed, for in fact there are none that are absolutely "single" or absolutely "double-blossomed." These expressions are not meant to indicate any peculiar structure of the flower as regards the number of the petals, but merely that the blossoms are produced singly or in pairs on the same

peduncle. Great efforts have from time to time been made to preserve the single-blossomed character, and notwithstanding the care that has been bestowed upon the selection, growers have hitherto failed in rendering it permanent. There is, however, no real advantage to be obtained even if that character were secured, for the supposed earliness of the single-blossomed Frame Peas is now far exceeded by other varieties that have been introduced of late years.

DICKSON'S FAVOURITE (*Dickson's Favourite Improved; The Wonder; Cotterell's Wonder; Torwoodlee*).—This seems to be a form of the Auvergne, but the plant has a more slender growth than that variety, and it is a day or two earlier. It grows from 4 to 5 feet high, with a single stem, and pale green foliage. The pods are produced in pairs to the number of twelve or fourteen, and are curved, but not so much so as in the Auvergne, and contain from six to seven peas in each. Ripe seed white. This variety, like the Auvergne, has a strong tendency to degenerate, and to lose its distinctive character, and therefore requires to be closely selected to preserve the stock in a state of purity. It is decidedly an inferior Pea to the true Auvergne, which it resembles, and which produces long, curved, well-filled pods containing from nine to twelve peas in each.

LEOPOLD II.—This bears a close resemblance to Early Ringwood, the foliage and pods being of the peculiar pale green colour of that variety. The pods are long, narrow, nearly straight, very badly filled, the middle pea in each pod being abortive. It is two days later than Early Ringwood.

BISHOP'S LONG-PODDED (*Bishop's Improved*).—The old Bishop's Dwarf is now entirely out of cultivation. It was a low-growing plant, 9 inches to a foot high, with a branching stem, and produced small insignificant pods $2\frac{1}{2}$ inches long and half an inch wide. Such a Pea is of no use in these days.

Bishop's Long-podded is a great improvement on the old variety. It grows about 2 feet high, produces numerous branches, and bears from eighteen to twenty pods on a plant. The pods are either single or in pairs, and contain from seven to nine peas in each. Ripe seed creamy-white.

SUTTON'S LONG-PODDED TOM THUMB.—At the trial of Peas held in the garden at Chiswick this season, the Committee decided that this was identical with Bishop's Early Dwarf.

CARTER'S FARMER'S PROLIFIC.—Plant with a strong and robust habit of growth, 5 to 6 feet high, producing fourteen to sixteen pods on each stem, which are narrow, and very closely filled with six or seven small peas. It is a very prolific variety, and comes into use about the same time as Dickson's Favourite and Auvergne.

SPANISH DWARF (*Dwarf Fan; Dwarf Bog*).—This is an old and worthless variety. The plant is about a foot high, branching out on each side in the manner of a fan, and hence it is called the Dwarf Fan. The pods are either single or in pairs, from 2 to $2\frac{1}{2}$ inches long, and about half an inch broad, terminating abruptly at the point, and containing from five to six rather large peas. There is a variety of this which is called the Improved Spanish Dwarf, and grows fully 9 inches taller than the old variety, but it possesses no particular merit to recommend it.

GLORY OF CASSEL is similar but inferior to Auvergne, and is about two days earlier.

AUVERGNE (*White Sabre; White Scimitar*).—The Auvergne Pea was introduced from France some years ago by the Royal Horticultural Society, but, although it very far surpassed every other variety of White Pea then in cultivation, it never became widely known or generally cultivated. It is a most characteristic variety, and always easily distinguishable by its long and curved pod. The plant is of a moderately strong habit of growth, producing a single stem from 4 to 5 feet high, according to the soil in which it is grown, and bears from twelve to fifteen pods on each. The pods are generally small, but sometimes in pairs; when fully grown, $4\frac{1}{2}$ inches long, and over half an inch broad, tapering towards the point and very much curved; they contain from nine to twelve peas, which are very closely compressed, and are the size of the Early Frames. Even the small pods contain as many as from seven to nine peas in each. The ripe seed is white. It is four or five days later than Early Ringwood.

SHILLING'S GROTTA.—The plant is of a strong habit of growth, always with a single stem $4\frac{1}{2}$ to 5 feet high. The pods are generally single, but frequently in pairs, $3\frac{1}{2}$ inches long and about half an inch wide, and containing on an average about seven large peas. The ripe seed is white.

It is thirty years since this Pea was introduced, and at that time it was a decided acquisition, being a great improvement on the second early varieties then in cultivation. Since the introduction of Champion of England, Champion of Paris, Prize-taker, and several others to which it is certainly inferior, and which ripen at the same time, it may very well be dispensed with. It ripens at the same time as Auvergne.

CHARLTON.—It is a hard matter to say what the Charlton Pea is now-a-days. The old variety, which was so long known under that and a dozen other names having disappeared, the Charlton

Pea, as a variety, exists only in name. For very many years it was the most extensively cultivated and the most highly esteemed of all the varieties then known. It was the earliest and the best, and the care bestowed on the growth and selection of the stock was as great as is now exercised on that of Emperors or Number Ones. The same propensity for the multiplication of the names of a good thing seems to have been as great in former ages as in this; and hence we find Charltons and Hotspurs with designations almost as numerous as the names of the persons who grew them.

The original name of the Charlton Pea was Hotspur, still used by some, and by contraction Hots; or, rather, it may be that Hots is the original, for I have somewhere read, in an old author, the word "hot" made use of in the same sense as we do "early." I do not know at what period this variety first became known; but I can trace it as far back as the year 1670, and from that period till about 1770, or as nearly as possible for one century, it continued to stand first in the lists as the earliest Pea, until it was supplanted by the Early Frame, about 1770. The various names by which it was known during the last century were Reading Hotspur, Master's or Flander's Hotspur, Golden Hotspur, Brompton Hotspur, Essex Hotspur, Omerod's Hotspur, Early Nichols's Hotspur, Charlton Hotspur, and, finally, Early Charlton. The last name became general about 1750. There can be no doubt that these names were applied much in the same way as we have described under Early Frame, and that the varieties were distinguishable according to the care with which the growers selected them. Master's Hotspur, which is still retained in some catalogues of the present day, was so called from a person of that name, who, it is said, selected it, and who was a nurseryman at Strand-on-the-Green, near Brentford, 140 years ago. It has also been called Hastings, Marquis of Hastings, and Essex Readings.

It is not in our power to furnish a description and a figure of this variety, for, as we have said, there is in reality no such thing as the Charlton Pea in existence. That which is sold for Charltons is any degenerated stock of Early Frames, or any stock of Frames which cannot be warranted or depended upon, but which are, nevertheless, of such a character as to admit of their being grown as garden varieties. Let writers on gardening, therefore, be careful in future, when called on for a list of Peas, not to give, as is often done, the Charlton as "the best second early." There is no distinct variety grown for Charltons by the seed-growers.

DWARF WATERLOO BRANCHING.—This closely resembles Bishop's Long-podded, but is two days earlier. In other respects there is really no difference.

NABOB (Laxton).—This was raised by Mr. Laxton from a cross made between Little Gem and Laxton's Prolific Long-pod. The plant is 18 inches to 2 feet high, strong and robust in habit, with large dark green foliage. It produces from ten to twelve pods, which are long and curved, of a deep green colour, and containing from seven to nine medium-sized pale green peas. This is the largest and most handsome of the dwarf early white Peas, and it is exceedingly productive.

ROYAL DWARF (White Prussian; Poor Man's Profit; Dwarf Prolific).—Plant of medium growth, with an erect stem, which is 3 feet high, generally simple, but occasionally branching. The pods are sometimes single and sometimes in pairs, but generally single, and from 2½ to 3 inches long, half an inch broad, almost straight, and somewhat tapering to the point; the surface is quite smooth, and the colour bright green. They are generally well filled, and contain from five to six peas, which are somewhat ovate, not compressed, eight-twentieths long, seven-twentieths broad, and the same in thickness.

The ripe seed is white. The seed was sown on the 5th of April, and the plants bloomed on the 26th of June. The blooms dropped and the slats appeared, and on the 16th of July the pods were fit to be gathered.

This is an old and very prolific variety, well adapted for field culture, and long a favourite in gardens, but now superseded.

CLAMART.—The plant is very vigorous, and in its habit much resembles Early Emperor. It grows late, and maintains its fine green foliage to the last. Pods generally in pairs, produced in succession, from sixteen to eighteen on each stem, and containing from six to eight peas each. It is a week later than Early Emperor.

PEABODY.—This is of a dwarf, bushy, and compact habit, and the leaves are rather small, numerous, and of a bright green colour. The stem is 2½ feet high and branching. Pods rather narrow, small, and extremely well filled, deep green, and containing from six to seven rather small peas. This is a very productive variety, and stands the dry weather well, but is of inferior quality. It is eight days later than Auvergne, and five days later than Royal Dwarf.

VICTORIA BRANCHING (Paul's Early Dwarf; Paul's Prolific).—Plant with a strong robust habit of growth, 3 feet high. The stem is generally simple, but sometimes branching, and bears from twelve to sixteen pods, which are 3 to 3½ inches long and

half an inch broad, and contain from seven to eight large peas. The foliage is dark green. Ripe seed white.

This is a very abundant bearer; it is three days later than Royal Dwarf.

CROWN (Bunch; Cluster; Mummy).—This is a very characteristic variety, known at once by producing its pods at the extremity of the stem in a bunch or tassell. The plant is 4½ to 5 feet high; the stem gradually increasing in thickness from the root upwards, in some instances to the thickness of a man's thumb, when it becomes quite dilated, producing twenty-four to thirty pods in a bunch. These are small, round, and well filled, in appearance like those of Early Emperor, and containing from four to seven small peas. Ripe seed small, round, and white.

This curious but useless Pea, sown on the 23rd of February, first bloomed on the 16th of June, and was in full bloom on the 17th. The slats appeared on the 21st of June, and the crop was ready for use on the 1st of July.

II.—MARROW PEAS.

Ripe seed white, large, smooth, uneven, compressed, irregular or egg-shaped. Skin thick. Foliage blotched.

PARADISE MARROW (Champion of Paris; Excelsior Marrow; Knight's Excelsior; Stuart's Paradise).—This was introduced in 1851, and in my published description at the time I remarked

—This is a novelty which fully maintains the high character with which it was brought out. It is as yet very little known, having appeared at a time when the public were somewhat awakened to the necessity of caution with which new varieties ought to be received. As regards this, however, there need not be the slightest misgiving, as I have found it to be one of those which must ultimately become one of the standard sorts if preserved in its present true character. The pod is of very large size, remarkably well filled with a deliciously flavoured Marrow Pea, and is fit to be gathered as soon, or at most within a day of the Ringwood Marrow. With such properties, therefore, everyone will allow it is a variety well worthy of general cultivation.

The plant is of a strong and vigorous habit of growth, with a stem from 5 to 6 feet high, which is branching towards the top. The pods are generally single, but frequently in pairs, about 4 inches long, nearly three-quarters of an inch wide, remarkably well and closely filled with from seven to nine large peas, and when they begin to ripen they are thick-backed, succulent, and fleshy. The ripe seed is white, round, and smooth.

This does its work very quickly, at least much more so than some others; for although it came into bloom five days later than the Ringwood, it was not, even at the utmost, more than two days behind it in podding.

DIXON'S EARLY DWARF PARAGON.—In its habit of growth this resembles Bishop's Early Dwarf. The plant is from 2 to 2½ feet high, with a robust branching stem which bears from sixteen to eighteen pods, generally in pairs. They are of a fine deep green colour, but do not fill well, containing from five to six medium-sized peas. Ripe seed large, white, flattened, and indented. It comes into use at the same time as Paradise Marrow and Bishop's Long-podded.

HARRISON'S PERFECTION.—Plant with a robust habit of growth, having a thick succulent stem, 3 to 3½ feet high, and large dark green foliage. The pods are produced in pairs from every joint, averaging sixteen or eighteen on a plant, but they are very irregularly and badly filled, and contain only from four to six peas. The peas are large and thick-skinned. Ripe seed white, medium-sized, and somewhat Lentil-shaped.

When this was first introduced it was considered a great acquisition, as being an early dwarf Marrow Pea, and as such it would have deserved all that was said in its favour, provided it had not the very objectionable property of filling irregularly. The pods early assume the appearance of being ready for use, but when opened are found to contain half-grown peas, four to six of which only come to maturity. It ripens at the same time as Prizetaker and Paradise Marrow, and is some days later than Advancer, which has the same habit, is far more productive, and has the additional advantage of being a sweet wrinkled Pea.

LAXTON'S PROLIFIC LONG POD (Laxton's Prolific Selected).—It is to be noted that there are two varieties of Peas in cultivation under this name; one has the ripe seed white, and the other is mixed white and olive. The former, with white seed, is the true, and the latter is merely an inferior stock of Prize-taker Green Marrow.

The true plant is of a robust and vigorous habit of growth, and with large pale-blotched foliage. The stem is from 5 to 7 feet high, producing from twelve to fourteen pods, which are in pairs. The pods are very large, of a pale green colour, broad, much curved, and pointed, and containing from seven to nine medium-sized peas. Ripe seed white, indented.

The seed was sown on the 23rd of February. The first flowers appeared on the 1st of June, and the plants were in full flower on the 5th. The slats appeared on the 11th of June, and the crop was fit to gather on the 25th—that is, within a day of Paradise Marrow.

THURSTON'S RELIANCE (Reliance Marrow).—The plant is a strong and very robust grower, always with a simple stem,

which is 6 to 7 feet high. At 3 feet from the ground the pods begin to be produced, and are regularly placed at every subsequent joint, even to the extremity of the plant, numbering in all from ten to twelve on each. The pods are generally single, but sometimes in pairs, from $3\frac{1}{2}$ to $4\frac{1}{4}$ inches long, and three-quarters of an inch broad. They are very broad and flat, which shape they retain even when quite filled. The under edge is very much of a Scimitar shape, and the upper is slightly curved and tapering gradually to the point. They are of a deep bright green colour, and the surface quite smooth, containing from seven to eight peas in each, which are large, nine-twentieths of an inch long, seven-twentieths broad, and the same in thickness. The ripe seed is white.

This is a very distinct and very useful Pea, an abundant bearer, and the pods are of a fine deep bright green colour, which is a recommendation to it when grown for market. It comes in at the same time as the Auvergne, but it is of a more tender constitution.

QUEEN OF DWARFS.—A very dwarf-growing variety, not more than 6 to 9 inches high. The stem is thick, succulent, and sometimes branching, and the foliage of a dark blue-green colour. Each plant produces about four or six pods, which are of a curious elliptic shape, and rarely contain more than three or four large peas. Ripe seed white, medium-sized, egg-shaped, unevenly compressed.

This is a very worthless variety, and unworthy of cultivation for any purpose whatever. The plant is so remarkably tender, that even in favourable seasons it does not develop nor fill its pods freely. In summers like the last it is chilled with cold, and in those that are warmer or more genial it is almost invariably attacked with green fly.

NOVEMBER PROLIFIC.—The plant is 2 feet high, with dark green foliage. The stem is rather robust, generally simple, but occasionally branched, and bears from twelve to sixteen pods. The pods are generally in pairs, rather short, and contain from four to six peas in each. Ripe seed white, medium-sized, smooth, and compressed. It is two to three days earlier than Victoria Marrow.

This somewhat resembles in growth the Royal Dwarf, but is very inferior to that variety, and, in fact, is not worth growing for any purpose.

EGG.—This is a very old variety, and long known by the name of Black-eyed Susan, from the seed having a black hilum or eye. The plant is of a strong and robust branching habit of growth, and from 7 to 8 feet high. It produces about eighteen pods, which are almost always in pairs, and these contain about seven good-sized peas, which are large and oval like a Horse Bean. Ripe seed white, large, egg-shaped, and with a black hilum.

This, though an abundant bearer, is quite a worthless variety, and it would be difficult to say for what object it is cultivated. The peas have a very thick skin, and a coarse Bean-like flavour, and when cooked are generally of a dusky brown colour.

VICTORIA MARROW (Waterloo Marrow; Giant Marrow; Tall Marrow; Wellington; Royal Victoria; Gibbs' Defiance).—The plant is of a strong and vigorous habit of growth, having a simple stem from 6 to 7 feet high. The pods are produced near the top of the stem, sometimes singly, sometimes in pairs in about equal proportion, and contain from five to seven very large peas. Ripe seed white, large, uneven, and roundish.

PRINCESS ROYAL.—The variety under this name grown in the Chiswick Garden this season proved to be as early as Paradise Marrow and Laxton's Prolific Long Pod. The true Princess Royal, raised by Dr. Maclean, and grown in the trial of 1860, was as late as Tall Green Mammoth and seven days later than Victoria Marrow. In the true variety the plant is 3 feet high, a strong and vigorous grower, with dark green foliage. The stem is generally simple, but occasionally branched, bearing from ten to twelve pods, which are usually in pairs. The pods are large, and have an attractive appearance, but they fill slowly and indifferently—so much so that when opened they average only from three to six large peas in each. Ripe seed large, round, uneven, and white.

DANECROFT PROLIFIC.—The plant very much resembles the Victoria Branching in habit. It is 3 feet high, robust, and frequently branching, and produces from twelve to sixteen pods, which contain from seven to eight peas of good size.

This is an abundant bearer, and four or five days later than Victoria Branching, to which it is not superior.

GREEN MARROWS.

Ripe seed of a mixed white and olive colour, either small, round, and pitted, or large, irregular, and uneven. Foliage dark green and blotched. Pods dark, bluish green, very glaucous.

WILLIAM I.—This is one of Mr. Laxton's new cross-bred varieties, and is the earliest of all the Green Marrow Peas. It is nine days earlier than Prizetaker, and ten days earlier than Laxton's Supreme.

The plant is from $4\frac{1}{2}$ to 5 feet high, somewhat slender in growth, being in this respect similar to the Early Frame class. Stem simple, producing from fourteen to sixteen pods, generally single, but frequently in pairs. The pods are long and very

handsome, of a dark bluish green colour, covered with a thick bloom like Prizetaker, and contain from seven to eight fair-sized peas also of a dark green colour. The ripe seed is small, round, indented, of a mixed white and olive colour.

This received a first-class certificate from the Royal Horticultural Society.

UNIQUE.—This is another of Mr. Laxton's cross-breeds, which is five days later than William I. It was obtained by crossing Laxton's Prolific and Little Gem.

The plant is of the same habit as Tom Thumb and Little Gem, and is from 1 to $1\frac{1}{2}$ foot high. The stem is moderately robust, branching, and producing eight to ten pods, which are usually in pairs. The pods are rather long, broad, slightly curved and pointed like those of the Blue Scimitar, and of a fine dark green colour, each containing from six to eight bright green peas. Ripe seed is parti-coloured.

A fine long-podded and prolific early dwarf Pea, to which a first-class certificate was awarded by the Royal Horticultural Society.

PRIZETAKER (Bellamy's Early Green Marrow; Prizetaker Green Marrow; Rising Sun; Leicester Defiance).—The original name of Bellamy's Early Green Marrow has now been entirely superseded by that of Prizetaker. In 1860, when the latter name was new, and the two Peas were grown side by side, I could not see any difference between the two. The old Early Green Marrow, from which this is a selection, is an inferior variety, and now not worth growing.

Prizetaker is $4\frac{1}{2}$ feet to 5 feet high, of a vigorous habit of growth. The stem is sometimes simple and sometimes branched, and produces from twelve to eighteen pods. The pods are in pairs, very rarely single, and of a deep bluish-green colour, covered with a thick and distinct bloom; they contain six to seven large peas in each, which are of a dark bluish-green. The ripe seed is small, round, and of a mixed white and green colour.

It is as early as Ringwood and Paradise Marrow.

LAXTON'S SUPREME.—This has much the same character as Prizetaker, than which it is one day later in coming into use, and the pods and foliage are of a paler green. The pods are very large, long, broad, and are not so well filled as they appear to be, yet they contain from seven to nine large peas. The ripe seed is olive green, and indented.

This is a large and very handsome Pea.

LAXTON'S SUPERLATIVE.—This is the largest-podded Pea in cultivation. It was raised by Mr. Laxton from crossing Ne Plus Ultra and a hybrid of Supreme. The plant is very robust in its habit of growth. The stem, which is strong, succulent, and not branching, is from 7 to 8 feet high, with large, broad, pale foliage, producing from fourteen to fifteen pods, generally in pairs. The pods are very large, being 7 inches long, broad, and somewhat irregular in their outline, much curved and pointed, and of a pale green colour; they contain from seven to nine large pale green peas. Ripe seed flattish, parti-coloured.

This large and handsomely-podded Pea does not fill very well, many of the pods being only half full. It received a first-class certificate from the Royal Horticultural Society.

MATCHLESS MARROW (Milford Marrow; Stradsett Marrow).—Plant 5 feet to 6 feet high, of strong and robust habit of growth. The stem is always simple, and bears from twelve to sixteen pods. The pods are generally in pairs, rarely single, and contain from six to seven very large peas. The ripe seed is large, uneven, variously and irregularly shaped, and of a white and olive colour mixed.

Sown February 19th, bloomed June 18th, slatted June 28th, ready for use July 15th.

This is a great bearer, and produces large, plump, well-filled pods, which come into use ten days after Prizetaker, but it is a tender variety.

GARBUTT'S AMAZON (Denyer's Early Prolific Green Marrow).—Plant a strong robust grower, 5 feet to 6 feet high, having a simple stem, which produces not more than six pods. The pods are either single or in pairs, and contain six large peas in each. Ripe seed white and olive mixed, large, uneven, variously and irregularly shaped.

This is very much in the way of Matchless Marrow, but comes into use five or six days later. It is also much less productive, and the pods, which are few, fill indifferently, so that it is not a desirable variety. Is it not the old Tall Green Marrow?

SUTTON'S BERKSHIRE HERO.—This is a much taller and stronger grower than the preceding, and five or six days later in all its stages. The plant is 7 feet high, and produces eight or ten large pods, which contain from six to seven very large peas. The ripe seed is larger than that of the preceding and of Matchless Marrow, uneven, variously and irregularly shaped, and of white and olive colour mixed.

This is a very late Green Marrow, being nineteen days later than Prizetaker.

MOSSY PODDED (Grotto Pea; Oyster Pea; Mummy Pea; Blankney Marrow; Australian).—The plant is 6 to 7 feet high, of a strong and vigorous habit of growth, with deep green foliage, which remains green for a lengthened period. Stem

generally simple, producing from twenty to twenty-four pods, mostly in pairs. The pods are long, slightly curved, full, and rounded, of a bright green colour, and frequently covered, especially where shaded, with a rough granular excrescence, whence the name of "Mossy Podded." They contain from seven to

eight medium-sized deep green peas closely packed, and which are inferior in flavour.

This is a very late Pea. Sown on the 23rd of February this year it bloomed on the 20th of June. Slats appeared on the 24th, and the pods were ready to gather on the 3rd of July.—H.

THE CLEMATIS.

In continuation of our notice of Messrs. Moore and Jackman's work on the Clematis, we now give the following extract treating of the Clematis as an exhibition plant:—

"The Clematis promises to become one of the most telling of exhibition plants at two different periods of the year, the species and varieties of the pateras and florida types furnishing excellent materials for the spring shows—about April and May; while those of the Viticella and Jackmanni types especially, as well as some of the lanuginosa strain, come in at a season which renders them particularly acceptable for shows held during the late summer months.

"The spring-flowering sorts cultivated for the early shows may be grown in 10-inch or 12-inch pots, in a rich loamy soil. In pots of this size the plants should sufficiently furnish cylindrical trellises of about 2 feet high and 1 foot 6 inches across. They flower from the well-ripened wood of the previous year's formation, and hence a supply of this wood must be kept up annually by encouraging a free growth after the flowering season is past. The general treatment recommended for conservatory plants may be followed out with these also, the earlier plants requiring gentle forcing. During the summer months, when free growth is desired, it is advantageous to plunge the pots into some porous medium, as old tan, ashes, or cocoanut refuse, and also to mulch the surface of the soil in the pots with half-rotten dung. For show purposes the flowers should be perfected under glass, or at least under a sunny south wall.

"A somewhat different treatment is required by the summer-flowering sorts. The plants, in fact, require to be kept as nearly as possible as if they were growing in the open garden. The limitation of root-space is probably the greatest source of failure with them, since it seems next to impossible to get them so finely developed in pots or tubs as they are when growing in the open ground. They require very ample root-space, and are, therefore, best grown in tubs, which are more convenient and manageable than very large pots. The plants may be formed by shifting on

young plants till they acquire specimen size. Or established plants may be taken up out of the border and put into tubs; but this should not be done in the same season as that in which they are required for exhibition, for the disturbance of the roots would prevent a successful issue. They should be established in the tubs the previous season, and during that in which they are to

be shown should be kept in vigour by means of mulching, and by feeding with manure water.

"Beyond this the cultivation of the Clematis for summer exhibition purposes offers no difficulties. Good vigorous plants are to be potted-up in rich light loamy soil, in well-drained tubs of convenient size. They must be pruned down rather closely in the first and in each succeeding year, while to favour the free and healthy growth of the branches during the summer, a judicious use of stimulants must be resorted to—top-dressing or liquid-manuring, as may best suit each individual case, being the means employed.

"Specimens of the summer-flowering varieties grown in tubs of about 2 feet across by 1 foot 6 inches deep should cover a cylindrical trellis 4 feet in height and 2 feet 6 inches across, and at the usual season should throw a mass of flowers, of which the accompanying is a fair illustration. These, however, will not bear shutting-up or forcing, or even at that season to be placed under glass, since it spoils the colours, but they are to be flowered in the full sunlight. The only mode of accelerating their flowering season, should they be likely to be rather behind the time at which they are required, is by submitting them to sun heat



Clematis Jackmanni as an exhibition plant.

in the open air under shelter of a south wall.

"Specimens grown in this manner are not only very suitable objects for spring and summer exhibitions, according to the varieties selected, but they also make admirable objects for placing in prominent positions, such as on terraces or open spots in flower gardens. The late summer varieties are not, however, suitable plants for shady positions."

PRIZE PEARS IN JERSEY.

THE annual Fruit Show of the Royal Jersey Agricultural and Horticultural Society was held in the Vegetable Market on October 16th, and was in every way worthy of the world-wide

reputation the island has acquired for the production of hardy and forced fruits and vegetables. On this occasion the fruit, especially in the Pear and Apple classes, was truly magnificent.

Chaumontel Pears, the entries for which were numerous, were the finest display the island has ever made. In Class 61, fifty Chaumontels, were unexampled samples of this queen of Pears, whether for table use or for culinary purposes. The first-prize set weighed over 58 lbs. Magnificent fruit, well coloured and of the true Chaumontel shape, were shown in Classes 62, 63, and 64 respectively, for twenty-five, twelve, and six. The other varieties which struck me as worthy of notice were Beurré Clairgeau, over 1 lb. in weight; Belle de Jersey [Uvedale's St. Germain], some of which were over 2 lbs.; and extraordinary examples of Pound Pears [Black Worcester]. Van Mons Léon le Clerc, General Toddleben, Doyenné du Comice, Marie Louise, Maréchal de la Cour, Beurré Bachelier, Beurré Diel, Duchesse d'Angoulême, Crasanne, Napoléon, Passe Colmar, Bergamotte Esperen, De Tongres, Groslin, Matthew's Eliza, Beurré Superfin, Nouveau Poiteau, Columbia, Pengethley, Beurré Hardy, Gansel's Bergamot, Joséphine de Malines, Colmar d'Aremberg, &c., were very fine examples of their kind, and called forth the admiration of visitors.

In the Apple classes the competition was very keen, and the samples exhibited of the following varieties were very fine and well coloured:—Old Pearmain, Cornish Gilliflower, Norfolk Beefing, Hawthornden, Hammond's Seedling, Hooper's Seedling, Royal Russet, Court of Wick, Ribston Pippin, Beauty of Kent, Golden Reinette, Alfriston, Harvey, Reinette d'Orléans, Reinette de Cour, King of the Pippins, Cockle Pippin, Golden Pippin, White Calville, Reinette du Canada, Emperor Alexander, Nonpareil.

Grapes, of which the island exports such immense quantities annually, were well shown in both the in-door and out-door classes. Vegetables and agricultural produce of the usual kinds formed a prominent feature in the Show.

The total number of classes in this Show was 142, whilst the number of entries was 549. The successful carrying-out is due to the indefatigable energy of the Honorary Secretary, Major Howell.—*VERITAS, Turf Bank, Jersey.*

TWO CROPS OF PEAS IN THE SAME ROW.

Being very fond of Peas, and also very short of ground, I determined last season to try a new plan, which I will endeavour to describe. November 9th I began by drawing three drills across my little south border, which just took one pint of seed of First Crop, which grows about 3 feet high. I then sowed half a pint of Supreme in the same rows, rodding with sticks about 6 feet high, adding plenty of spray at their bottom. On May 29th I gathered my first dish of First Crop, and on June 18th my first of Supreme. The Peas hung literally from top to bottom. I have this day in the same land done likewise, and I have no doubt will again succeed. In the spring sowing I use Little Gem for early and Champion of England for late use.—*AN AMATEUR GARDENER, Stamford.*

THE ROCKERY.

(Concluded from page 348.)

HERBACEOUS AND ALPINE PLANTS, Continued.

THE following Sedums and Sempervivums may be relied on as good:—

Sedum Lydium.—One of the prettiest in the class, of which *S. acre* may be regarded as the type.

S. pulchellum.—Also good, having a reddish tinge in summer. It is dwarf and compact.

S. acre variegatum.—Said to be good, but I have not been able to do much with it.

S. Aizoon.—Pretty in foliage.

S. kantschaticum.—Pretty yellow-flowering plant.

S. roseum.—Also pretty, with large rose-coloured umbels.

S. glaucum.—For its foliage, which is of a silvery-grey colour.

S. Sieboldii and its variety *variegatum*.—Pretty trailers.

S. spurium.—In the way of *pulchellum*.

S. dentatum.—Different from the above, but dwarf.

S. Fabaria.—Too tall for ordinary places, but the plant being so hardy and of easy growth I include it.

Sempervivum arachnoideum.—Requires the full sun and a dry situation.

S. globiferum.—Green and showy rosette-like growth.

S. californicum.—One of the very best rock plants known; it is not particular as to site.

S. tectorum.—The common Houseleek, not so pretty as the last named.

S. tabuleforme.—Perhaps not hardy, but of handsome growth.

S. auvergnense.—One of intermediate growth.

S. accuminatum.—Also of the thick fleshy-leaved section.

Tournefortia heliotropioides.—Like a Heliotrope, only disagreeable-smelling; it is also dwarfer, and quite hardy.

Thyme.—A variegated form of the common Thyme is very effective, and I imagine a newer one is better still.

Verbena venosa.—Very hardy, but nothing to look at in winter. *Veronicas*.—Several species, but only the dwarf ones are desirable. One or more variegated varieties are very good and useful.

Veronica rupestris.—A bright blue trailing species. Very showy.

Viola cornuta.—Needs no comment.

Besides the above-named plants, which are all herbaceous or of the Alpine class, a few low-growing shrubs are necessary to give a sort of outer clothing to a feature of this kind, the more especially if there be no neighbouring trees or large shrubs close by. Other shrubs may be added if the soil and situation suit them; but amongst the following will be found several that will be useful in the rockery:—

SHRUBS.

Cotoneaster microphylla.—A trailing shrub, almost indispensable.

Escallonia macrantha.—The bright shining leaves of this, with its interesting trusses of bloom, render it highly serviceable for this work; it is also of moderate growth.

Juniperus repens or *prostrata*.—Also a pretty trailing tree or shrub of low growth.

Skimmia japonica.—Will succeed on the shady side and where the soil approaches a peat.

Euonymus japonicus aureo-variegatus.—May be useful where the soil is not too rich to destroy the variegation.

Euonymus radicans variegatus.—A very pretty dwarf silver-edged plant, not likely to grow too large.

Raphiolepis ovata.—Not likely to become too large. Its pretty white flowers and clusters of berries render it interesting.

Helianthemum.—Some of those of the neatest growth are good.

Bor.—A plant or two may be introduced, as its lively appearance in winter is always agreeable.

Yuccas.—One or two plants of *Y. filamentosa* may be planted.

Irish Yew.—One or two plants may be allowed, but rather let them occupy the back than the front.

Retinospora leptoclada.—The slow growth of this pigmy tree entitles it to a place in the front, and it will be several years ere it offends by its height, while its appearance at all times is everything that can be desired.

Cistus.—I confess being unwilling to recommend the *Cistus*, as their appearance is not pleasing at all seasons.

There may be some other shrubs which the requirements of each case may suggest to the planter, as Heaths and other American plants; but I have taken little notice of them, not on account of their unsuitability, but because they require a special soil.

Rockeries, where they are expected to be inspected every day in the year, should be mostly planted with subjects that look well at all seasons; and if a considerable number of the plants assume their best appearance in winter, as some of the Saxifrages of the hypnoides section do, so much the better—summer always furnishes attractions elsewhere. If possible let the rockery look well in winter, and many of the plants enumerated will contribute to such a result. As bloom in the dull winter months is always acceptable, let there be a plentiful supply of early Primroses, as well as Winter Aconite, Christmas Rose, Snowdrops, and Crocuses. Plants like these peeping out between boulders or roots have a cozy appearance and are always acceptable. On the other hand, omit annuals as much as possible; they smother other things and leave a sad blank when gone. It is for a like reason that I have recommended so many plants of moderate growth; large coarse-growing plants, however pretty, while sprawling over everything else, leave a sad blank when they are off. Too much grossness must be avoided by judicious cutting, for though the rockwork may and ought to present a certain degree of wildness, or rather an absence of all training, still means must be taken to prevent a too robust plant smothering one of more limited growth, especially when the latter is, perhaps, the more interesting of the two.—*J. ROBSON.*

LYTHAM HALL, LANCASHIRE.—No. 1.

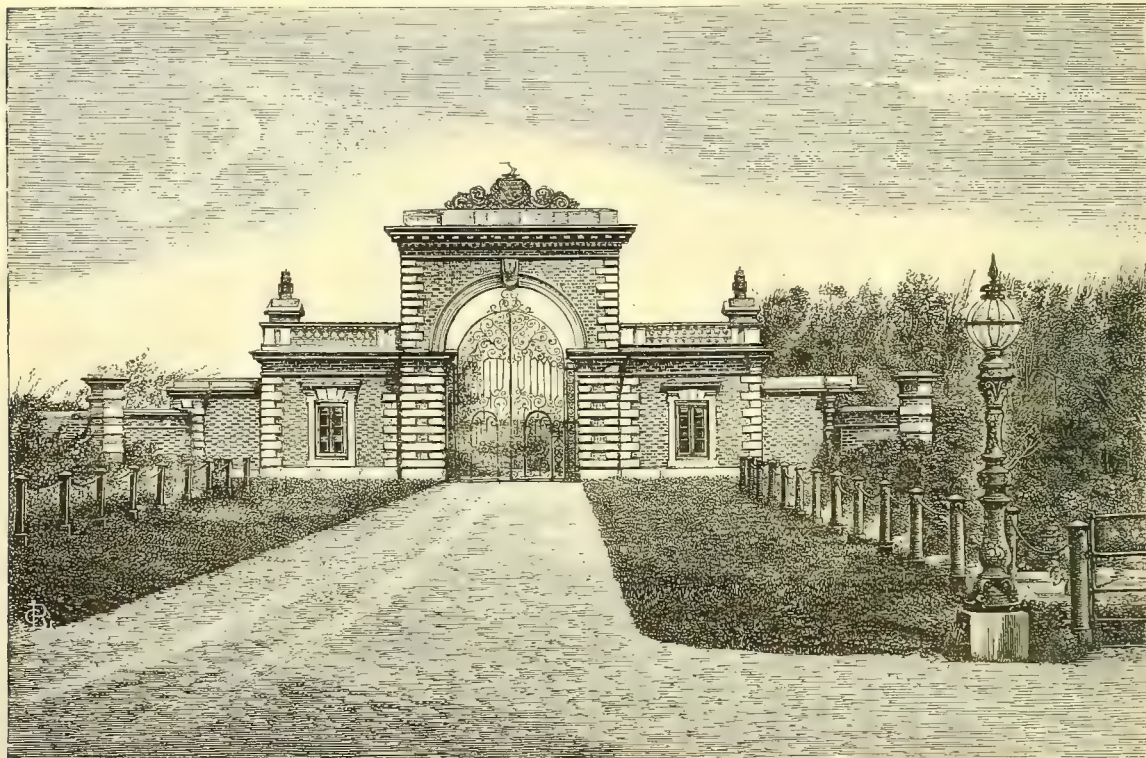
SEAT OF COLONEL TALBOT CLIFTON.

It has often been truly said that wealth creates want, but at the same time it possesses the means of satisfying that want, and in the present instance the supply and demand are reciprocal. The wealthy and hard-worked population of the great Lancashire and West Yorkshire towns want now and then a holiday and a mouthful of fresh air, as well as to feast their eyes on scenes different from the smoke-stained brickwork they have to gaze upon so many months in the year.

With a becoming liberality some of the finest gardens in the kingdom are at times thrown open to the operatives of these great manufacturing towns, and to their credit, be it said, that but rarely do they misbehave when so trusted. The gardens of Enville, Chatsworth, and Alton Towers—places of almost national importance—have had their crowds of factory hands on various occasions, and to the honour of the owners of these places, as well as others, it does not appear that there is any abatement of the privilege accorded, although in all cases it adds considerably to the cost of maintaining the gardens. But apart from excursions to such places (and they are neither few nor unimportant), there are other places to which the wealthy manufacturers and others send their families during a part of the year. Buxton and Matlock inland, have each their patrons, while the best sites on the western coast of Lancashire have become fashionable watering places in an incredibly short time, or have emerged from the condition of unimportant

villages to that of towns seeking for representation in Parliament. Southport, Lytham, Blackpool, and Fleetwood have risen into importance by the rapid increase of the wealth of inland towns, whose population flock thither if only for a few hours' recreation, or it may be some weeks of residence, but by far the greater number are of the first-named class. However, it is not my purpose to dilate on such topics, but rather to endeavour to describe what has been done by the spirited proprietor of an estate adjoining one of these fashionable watering places—Lytham—and to show that much that he has done might also be done elsewhere.

The rising town of Lytham occupies the northern shores of the estuary of the Ribble, and is reached by rail from Preston, and a continuation of the same line goes on to Blackpool, a town of still greater importance; while opposite to Lytham, across the estuary, is Southport, which, however, is several miles distant, and only accessible by water when the tide is in;



Lytham Hall Entrance Gate.

for the waters of the Ribble, unlike those of the Mersey, are shallow at other times, and the tide recedes a very considerable way, leaving a sandy beach available for all descriptions of games, &c. The water is exceedingly rough at times when a regular south-wester sets in, but a large space has been embanked, and an asphalted promenade has been formed along the top of the embankment for the use of the public, while the face of the embankment is cased with stone also cemented together, and damages, which are not at all uncommon, repaired as they occur. The ground thus protected is several acres in extent, nearly all sand, on which only certain grasses live, but do not form a good sward; still it serves all the purposes of a recreation ground when the sands are not available owing to the tide. Beyond, handsome residences are rising, in addition to others that are already built, and shrubs suitable for such a place were planted in abundance. Added to these attractions soon will be a park for which Col. Clifton has given the land.

Such is Lytham which adjoins the Park of Colonel Clifton, whose residence, Lytham Hall, is but a short distance from it; in fact, one of the entrances to the park is from the back of the village, where a fine lodge has been recently built, and a new carriage-road made leading to the mansion. My visit, however, led me another way, and my astonishment was great

to find myself so quickly almost shut-in by healthy vigorous trees, for the mansion and its surroundings seem embedded in plantations of from thirty to fifty years' growth, which I was surprised to find in such a healthy condition within a mile of salt water, and that, too, on a coast so remarkable for its storms; yet there they were. My astonishment was increased when I was told by Mr. Shepherd, the gardener, that the level plain on which the mansion stood, including the garden and park, is absolutely 2 or 3 feet below high-water mark—that is, the point to which the highest tides rose. Some of your readers will doubtless expect to hear that the whole is a marshy swamp, but it is just the reverse, for vegetation was absolutely suffering from the dry weather, the soil being nearly all sand. Although the tides rose as high as indicated, they were banked out of the park and surrounding country, there being sluice gates to let off the inland water at low tides. The result has been that an extensive tract of valuable land has been reclaimed, and a large breadth around the mansion has been judiciously planted on the exposed sides, while other plantations had been elsewhere formed. Although my visit was too short to allow of my noticing their appearance on the windward, or, rather, extreme seaward side, I could see that a kind of Willow formed the forlorn hope in that direction, but in the interior of the plantations all kinds of trees were growing, includ

ing Conifers; and on the lawn Mr. Shepherd pointed out to me more than one Wellingtonia in the most robust health. The contents of the flower-beds were equal to anything of the

kind I had seen, the Coleus being very fine. The accompanying representation of the entrance lodge and gateway is from a photograph by Mr. J. Wardley, of Lytham.—J. ROBSON.

PAULLINIA THALICTRIFOLIA.

THE subject of the present illustration is a native of Brazil, and belongs to the order Sapindaceæ. Some of the members of this genus are possessed of peculiar properties; for instance, the seeds of the Guarana (*P. sorbilis*) are pounded into hard cakes, and become an important article in trade, being used in the preparation of a cooling drink, and distributed all over the Brazils under the name of Pao de Guarana. The active property is called guaranine, and is said to be exactly similar to the theine of the Chinese tea.

As will be seen by the figure, *Paullinia thalictrifolia* is a very elegant plant; its leaves are beautifully divided, reminding one of a very finely-cut Maiden-hair Fern; in a young state they are suffused with a charming tint of rosy pink, which changes with age to a rich bright green. The young shoots will form a splendid addition to the available objects for table decoration, and may be used with advantage for twining about the stem of a large vase or epergne, or for forming an arch over the dinner table. The fact of their



Paullinia thalictrifolia.

lasting for a very long time after being cut will considerably enhance their value for purposes of this description. Looking at the plant, however, with a gardener's eye, we shall find that it is of somewhat scindent habit, and that it may be used with advantage for covering a pillar or trellis, or for training up a rafter in the plant stove; it may also be grown into a bushy specimen, and thus managed will be found a most effective object either for home decoration or public exhibition.

This species is one of the new plants distributed to the public by Messrs. Veitch & Sons, of Chelsea, for the first time

this season, and your readers are indebted to the kindness of these gentlemen for the accompanying illustration.

Paullinia thalictrifolia requires the temperature of a stove, and should be potted in a mixture of about two parts light loam, one part peat, and one of good leaf mould, adding enough sharp sand to make the whole feel gritty when taken in the hand. As a plant to be cut for bouquets, or to be grown into little specimens for the decoration of apartments or for the exhibition tent, it is scarcely possible to find a more effective and pleasing subject, and I strongly recommend it to all whom it may concern.—EXPERTO CREDE.

COLD FRAME PROTECTORS.

I HAVE often thought that a more effective plan might be adopted for the protection of plants in cold frames during the

winter months than any now in use. Coverings of bast mats are the most usual, and are at the same time objectionable.

They are untidy, unsightly, and troublesome in wet or windy weather, and are also expensive and not durable. I would recommend the substitution of mats made of straw, worked and bound together after the manner of targets and bee hives, taking care, however, that they are not so tightly bound together as to prevent their being rolled up when not in use. These mats should be made the length and width of the frame, about three-quarters of an inch to 1 inch in thickness, and I feel confident they would last two or three seasons with ordinary care.

Some years ago the poor living in the districts surrounding Manchester used such mats as mattresses for their beds, but they have now become more luxurious in their tastes, and such an article is no longer to be met with. I have made several inquiries in this and other neighbourhoods where such mats could be obtained, and have applied to the makers of bee hives and targets, but they do not seem disposed to undertake them. I should feel greatly obliged if some one of your numerous readers would kindly inform me where I could procure them, or give such instructions as would enable a gardener to make them.—R.

[Mr. Fish has frequently described in our columns the method of making straw mats, though not of the kind you mention.—Eds.]

JOTTINGS ON THIS YEAR'S GARDENING.—No. 3.

PEAS after the middle of August were not good, but up to that time they were excellent. Dickson's First and Best gave fully double the crop of Eastes' Kentish Invicta, a blue Pea, in my opinion no recommendation, as many of these are no better than, if so good as, the white kinds. The last-named is as early as the earliest white kinds, which evidently are selected stocks of the true Dillistone's Early.

Princess Royal produced a capital crop, the pods well filled and numerous. It is a white kind, of delicious flavour; one of the best for succeeding the first earlies. It is of moderate growth, not exceeding $3\frac{1}{2}$ feet in height. Huntingdonian I pitted against Champion of England. The former beats the latter in the number of pods produced, but they are smaller, and the peas are also of less size. Champion of England is still one of our very best Peas, if not the very best for flavour in its season; it is clearly a mid-season variety. Laxton's Supreme had smaller pods than usual, but nevertheless produced a fine crop. It was in use at the same time as Huntingdonian. The last three attained a height of 6 to 7 feet. My soil just suits Peas. It is neither light nor heavy loam, and is full of grit stone of various degrees of size, and loose to more than 2 feet in depth. All are sown 6 feet apart, and the ground between the rows is cropped with late Celery. This distance answers well for the kinds from 4 to 6 feet high; they form grand rows of 4 and 5 feet through, leaving just enough room for a person to pass between to gather the crop. Six feet is, however, too close for the tall sorts; they meet, are difficult to gather on that account, and are not nearly so good as at 7 or 8 feet apart.

Maclean's Wonderful, Maclean's Premier, and Veitch's Perfection, which I depend on for the August and September crops, have not been nearly so good as in former years. The wet told on them disastrously, but I must say they were not sticked so early as they needed; the haulms became a little laid, and I find again, as I have seen before, early requirements neglected are not by late attention to be made up for. Peas can hardly be sticked too soon after they are above ground. The Pea is in every sense a climber and needs sticks. All laying on the ground diminishes the quantity and quality of the produce. Emperor of the Marrows offered a favourable comparison to these kinds. It is a large Pea, with fine pods, the sweetest Pea I have tasted, and as Mr. Rivers would say, had it been a new Pear, "buttery, melting, and most excellent." As a late Pea I have grown it against Ne Plus Ultra. Emperor of the Marrows is a much stronger grower; the haulm goes up straight as an arrow, does not show a blossom, and, of course, a pod under 3, often 4 feet; it branches little or not at all until it has grown 5 or 6 feet, and very little even then. It is over 9 feet in height. Compared with Ne Plus Ultra the pods are about half as numerous, they are twice the size, and the peas are much more tender. It does not appear to be so hardy as Ne Plus Ultra, the latter not being at all affected by the 8° of frost we have had, but some of the leaves of Emperor of the Marrows have been slightly blackened; the pods, however, are not affected by the frost. It

is very much too tall, and so is Ne Plus Ultra, for in exposed positions like mine they are liable to suffer from autumn winds and rains; nevertheless, we send in Peas every day as yet (October 29th), and may for weeks if weather permit.

Premier and Mammoth Dwarf Green (Lord Raglan) I have along with the two tall kinds, and from previous experience, as also this season, it seems they grow so near the ground as to make growth so succulent in consequence of the autumn rains, or from the lessened height, as to be cut off by frost, whilst the taller sorts escape. It may be that they receive more wet from dew and retain it longer than the tall kinds; but, whatever the cause, after September the 3 or 4-foot sorts are unproductive.

CAULIFLOWERS have been as good as we may expect in a moist season. The late crops will have quite enough to do to come in, even with mild weather. Veitch's Autumn Giant with its firm close head, and harder than most, is only just now "buttoning," and Walcheren, with Stadtholder, are in a like plight. Nothing but fine mild weather will bring this late lot on, but when they have heads like a teacup they will be taken up and laid-in, the smallest in a frame, the larger in a spot where they can be covered up during frost, and those in the frame also, with protecting material, as dry litter. Coming into use late, they are as much esteemed as the earliest—often more. Lenormand's is a fine kind for summer, and Dwarf Erfurt Mammoth for sowing in spring to succeed those wintered in hand-glasses or frames.

BROCCOLIES have not grown well; they are small, but grow fast. They will not be laid-in; the stems are so short that we can put litter between the rows when we have frost, and it answers just as well or better than laying. Besides, the litter, by the time the crops are cleared, is fit for digging-in. I consider there is no greater loss in thus applying the manure than when it is laid up in heaps or hotbeds. In the latter it heats, the ammonia escapes, whilst we entirely lose that carried off by wet. On the ground we secure the fertilising properties washed down by wet; and as the manure does not heat, and evaporation is not great, have we not more ammonia reserved for the soil? All our ground occupied with winter greens will be manured in this way. As for appearance, it has not been termed bad; I think it gives a comforting look.

Except Savoy, which are large and good, also BORECOLES, winter greens are poor and late. I put out some Cabbages at the same time as winter greens (middle of July), and they have now some fine hard hearts. I also planted a later lot, with nearly a thousand Savoy, Borecole, and Brussels Sprouts in the second week of August, and they are turning-in well. Brussels Sprouts are very dwarf, the sprouts not half so good as expected, or as they were last season. I give all the Cabbage tribe a dressing of salt at the end of September. I have an idea it is taken up by them, and the plants are not so liable to suffer from cold. It is put on so as not to come in the hearts of the plants. Salt also makes quick work of slugs, which have been a plague this year. Had it not been for quicklime frequently dusted over many crops as soon as they were above ground, and in some instances before, as Lettuces and Dwarf Kidney Beans, I fear they would have failed. What a curious thing it is that slugs will not eat Endive! It is about the only vegetable I know they will not. How partial they are to Mushrooms, eating away the gills! I may mention the only harmless help I have known in a garden is the quick and pretty pewitt. I have one now, pinioned of course. In summer we got a companion for it, but whether from the loss of blood in cutting the wing at the first joint, or from the excessive wet which followed its captivity, it died. Whilst on the subject of birds I would say, though seagulls will eat mice and not turn tail on a small rat, they will set to and take every leaf off and the delicate heart out of a lot of Cabbage or Cauliflower. Ducks, young or old, with their webbed feet, break the neck of every seedling put in, and what is a Cabbagewort good for after that? Fowls scratch everywhere but where wanted. I have no doubt insect food is good, and I believe essential for the health of fowls, but I believe anything that will act the part of an efficient destroyer of the pests they are put into gardens to feed on, and at the same time will serve as a fertiliser, is better than any insect-devouring fowl. I state this from dire experience. Dressings of lime, salt, soot, guano, and nitrate of soda kill every slug they come into contact with, and are fertilisers which no gardener ought to be without.

DWARF KIDNEY BEANS were good, but entirely cut off by frost at the end of September. Canadian Wonder out of doors had the longest pod of any, but I only grow Sir Joseph Paxton

(an improved Six-weeks) for early use, Negro, and Liver-coloured. The Canadian Wonder grows about as strongly as Negro, has pods about $1\frac{1}{2}$ to 2 inches longer, and comes in at

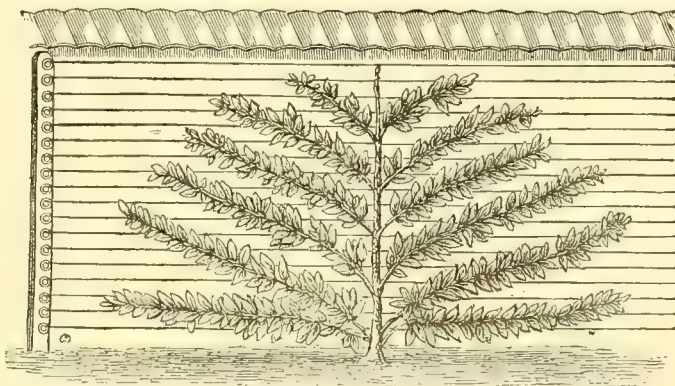
the same time. It is a good sort. SCARLET RUNNERS have been and still are (Oct. 30th) good. I grow the old sort and Champion; the latter I prefer.—G. ABBEY.

WIRING GARDEN WALLS.

THE system of building garden walls of concrete, with brick pillars at regular intervals, and the whole faced with cement, is being chosen in preference to brick walls by many of those who require enclosures for large as well as small gardens, and I believe it is not too much to say that many persons have some doubt as to the satisfactory result of embarking in this form of construction for garden walls. Their belief is that they will not withstand the severe test of the weather in our climate for any great length of time, and they have other reasons which I need not now mention. Be the result what it may, the concrete system is on its trial, and if it answer, hundreds will be induced to adopt it.

As regards first outlay, there is not a doubt about concrete walls being much cheaper than brick walls, and the work is very much more expeditiously executed; these are items for consideration where there is much ground to enclose and the walls high. The walls of the new kitchen garden of nearly seven acres at Hatfield House, the seat of the Marquis of Salisbury, are built of concrete and faced with Portland cement; they are 12 feet high, 18 inches or more thick, and the whole length is over 750 yards, and protected by a narrow brick coping. The walls are supported by strong brick pillars at intervals of 20 feet; these are built-in with the wall, and therefore out of sight. The greatest part of this work was done while I was in the service of the Marquis, and completed in twelve months, with comparatively few hands. This experiment will be watched with considerable interest by those who have such work in contemplation.

After completing the walls, the next thing for consideration was, How and after what fashion were they to be wired? The great aim was to deface or injure the walls as slightly as possible, at the same time to have strength and durability, and I need hardly say that this was found in the system of wiring walls adopted by Mr. R. Holliday, wire-worker, 2a, Portobello Terrace, Notting Hill Gate, London. His system is



the best that I know, and most others who have seen it at Hatfield agree with me that it is both neat and strong, as well as correct in principle. The accompanying figure represents the system on which these walls are wired, and I will describe it as well as I can. In the first place, galvanised iron eyes are driven into the wall at intervals of from 9 to 10 inches as may be agreed upon, these are to regulate the line of wire which passes through them. At one end of the wall is an iron bar

firmly fixed into the wall by iron fangs 4 inches long, and cemented in strongly and neatly; this is pierced with holes, and each wire first fastened firmly to it, and then passed through the eyes and connected to an iron frame or ratchet bar with rollers and cog-wheels. This is at the opposite end of the wall. Each wire has a roller and cog-wheel to itself, and is tightened by an iron spanner or wrench. The wires, and indeed all the connections, are much stronger than those adopted by the French

in wiring their walls, as will be seen when the breaking strain of the wire on Mr. Holliday's system is nearly, if not quite, double that of the wire used by the French—in fact, the whole piece of workmanship has so far turned out satisfactorily, and is the best I have yet seen.

With regard to the training of the trees to walls that are wired similarly to the above, there can be no question about there being a great saving of time over the plan of nailing. Horizontal-trained trees look handsome objects on a straight line of wire, and whatever form of training may be chosen for the trees it will always present a neat appearance, owing to the absence of shreds; if soft matting be used for tying, it is quite invisible to the eye a few feet from the wall, and if the ties be properly made no branches will get displaced or injury be done to the shoots. The strength of wire used by Mr. Holliday precludes all possibility of the shoot pulling it out of its position.—THOMAS RECORD.

THE UTILITY OF PRUNING.

(Concluded from page 346.)

As regards trees grown in the open ground, they chiefly take the form of high standards if, like orchard trees, they are left unpruned—that is, they have a stem of variable length, topped by a bulky head of rounded outline. It is necessary to plant them at a considerable distance apart, and after all the quantity of fruit coming from them will be but little in proportion to the space they occupy, for the head, which consists of confusedly intermixed branches, will not allow a free entrance to the light, and will bear fruit on the surface only. If, on the contrary, by means of pruning we induce these trees to assume the conical shape (in which the cones at the point near the soil where they spring have a diameter equal to a third of their height, a growth of their surface equal to that of heads of high standards, and lastly, a regular dispersion of the branches over the stem at such distances as to enable the light to penetrate them throughout the whole of their length), the following advantages are obtained: The trees can be moved nearer to each other, and they possess, by virtue of their conical form, an expanse of development equal to that of the high standards. A greater number of them can then be placed over the same extent of ground, and, moreover, their branches being more shone upon, a greater amount of fruit will be yielded by each than in the case of orchard trees. Trees

trained on the double-espalier system with vertical cordons give, in the latter respect, more satisfactory results than even those trained on the conical method. We can, therefore, conclude from what has gone before, that pruning, by changing the natural shape of trees, increases their fruit-bearing surface without augmenting their extent, and thus enables us to obtain a greater amount of fruit from the ground in which they are grown.

But whilst speaking here of the different forms given to the framework of fruit trees, we feel it our duty to rise up in protestation against an immoderate practice which is now-a-days carried to the most extravagant bounds. On looking at the fruit gardens of certain of our amateurs, one is almost led to believe that the real end of pruning is the torturing and twisting of the trees into more or less grotesque shapes. Many of these are truly ingenious and pleasing to the eye, but one is soon convinced that the time and care given to procure such effects are not rewarded by a more abundant crop. The oftener the main point is thus sacrificed for the sake of the outline, do those who think that pruning is useless in regard to its influence on the produce feel themselves more strengthened in this opinion. The shape of the framework should not, therefore, be regulated by whim or fancifulness. It should above

everything fulfil these two important requisites—to require the least possible amount of time and care in its execution, and to allow the accumulation of the greatest possible number of fruit-bearing branches upon a given extent of ground.

The chief objection brought forward against pruning is that the practice of it shortens the life of the trees. This aspersion is deserved. It is certain that the suppressions made every year at the time of the winter pruning, and above all, those inflicted upon the buds during the course of growth, have a very baneful effect upon the good constitution of the organised matters intended for the yearly support of the tree. In consequence of these mutilations, the layers of wood and liber are imperfectly produced, and the new roots can with difficulty find their way into a region of earth which is yet unexhausted by the growth of previous years. The cause of this complaint increases every year, and the signs of decrepitude appear long before the time when it would otherwise make itself known in trees left to themselves. Thus, if a Pear tree under a suitable system of grafting is able to live for forty years, one of the same variety, if placed in similar conditions, but unsubjected to any such interference, will exist as long as seventy.

Must we, therefore, give up pruning? We do not think so, for it affords us the following advantages:—1, On an equal expanse of land we get a greater number of fruit-bearing branches, and, consequently, a greater quantity of fruit. But even if the amount of fruit obtained yearly did not exceed that given by the orchard trees, the balance would still remain upon the side of the pruned ones, although they live a shorter time than the former. An orchard Pear tree capable of existing seventy years, does not begin to yield its greatest sum of fruits until the framework is perfectly developed, which generally happens about its thirtieth year, and in the forty years still left to it in which to yield fruit it only does so biennially, or, in fact, only during twenty years, whilst pruned Pear trees, although attaining to but forty years of age, begin to give their greatest amount of fruit towards their sixth, and bear a crop every year. We have, then, at least thirty productive years instead of twenty. 2, The whole income which the tree is capable of yielding is not only more plentiful, but it is realised in a much shorter time. 3, Lastly, as we have shown above, the fruit is larger and better.

Must the necessary consequence of all we have already said be that the culture of orchard or unpruned trees should become abandoned? We think that this would be rather too sweeping a decision. It is in every respect a question of capital. Orchards cost little to make and maintain, but the capital required for their cultivation gives but a small interest. The fruit garden demands for an equal extent of ground a very large capital.—A. DU BREUIL.—(*Revue Horticole*.)

CALLS AT THE NURSERIES.

MR. FORSYTH'S, BRUNSWICK NURSERY, STOKE NEWINGTON.—On calling the other day we were glad to find Mr. Forsyth still maintained, and is determined to maintain, his high reputation for the culture of the Chrysanthemum. Mr. Salter, of Hammersmith, was at length compelled to retire after withstanding for many years the determined attacks of the railways. He was called the "Chrysanthemum King;" but if to Mr. Salter we owe the introduction of the major part of the splendid varieties cultivated at the present day, we are no less indebted to Mr. Forsyth for showing what they are when well grown, what great dimensions their blooms attain, and what effective objects large and well-grown specimens are. Departing from his usual practice, Mr. Forsyth has placed his collection, amounting to 300 or 400 pots, not in his show house, which is now filled with Camellias and Azaleas, but in a long span-roofed house, and he has not grown any large specimen plants such as in former years excited so much admiration; still he has a display which for variety of colour and general excellence fully keeps up his well-earned reputation. Chrysanthemums near London are late this year; those at the Temple being an exception to the rule, but during the next week Mr. Forsyth's will be in the height of beauty. We shall not give a list of the best of the older varieties, which are all excellently represented, but will confine ourselves to mentioning a few of the best of the last and present year. Among the former may be noted Renown, orange with a lighter centre, large and finely incurved; Model, rosy pink; Felicity, white, lemon centre; and Mount Edgumbe, pale yellow, tinged with rose. Chrysanthemums of 1872 are represented by Duke of Roxburgh, yellow, tipped with bronze;

Mr. Howe, a sport from John Salter, orange amber; White Venus, a beautiful pure white, with large florets, altogether a very fine flower, like lilac Venus, of which it is a sport; Laurinda, rose purple, fine; and Duchess of Manchester. Of Japanese varieties, Elaine, pure white, sent out by Mr. Forsyth, received a first-class certificate from the Royal Horticultural Society's Floral Committee on the 6th inst., when exhibited by Mr. Rowe—a distinction it well deserves. Fair Maid of Guernsey, another variety of the same class and colour, but larger, will no doubt prove to be a valuable decorative kind.

VIENNA INTERNATIONAL EXHIBITION.

At the meeting held yesterday at South Kensington to consult as to the steps to be taken to worthily represent British horticulture at the approaching International Exhibition at Vienna, Dr. Hogg, the Chairman, after stating the object for which the meeting was convened, invited discussion as to the best mode of carrying out the end in view. Considerable doubt was expressed by several of those present as to the possibility of conforming to the official programme; the general impression was that this could not be strictly adhered to; and the length and expense of transit was another element which was a serious consideration, especially as there was no likelihood of assistance from the Government grant. It was thought, however, that the Austrian Government would meet that difficulty in a liberal spirit. Several exhibitors having promised their support, it was proposed by Mr. Harry J. Veitch, and adopted by the meeting:—

1. That cultivators be invited to make a permanent exhibition of hardy plants, such as Rhododendrons, Azaleas, Conifers, Hollies, Clematis, Roses, &c., and that these be sent as early in the year as possible, so that they may be established at the opening of the Exhibition.

2. That at a later period of the year cultivators be invited to unite in sending exhibitions of flowering, fine-foliaged, and pot plants, also cut flowers; and that all exhibitions be regarded as simply illustrations of British horticulture, and without any competition between the exhibitors.

3. In addition to these, a great fruit exhibition will be made in the autumn under the management of the Royal Horticultural Society.

Dr. Hogg said he ought to mention that at the last meeting it was stated that there were a number of vans at South Kensington which might be placed at the disposal of the exhibitors.

STOKE NEWINGTON CHRYSANTHEMUM SHOW.

THE Stoke Newington Society's twenty-sixth annual Exhibition took place on the 11th and 12th inst. Although the number of exhibitors of specimen plants was not equal to that of former years, and we think, too, there were not so many cut blooms, some of the latter in particular were so large and so perfect that it is hardly conceivable that they could be exceeded. In the open class for twenty-four cut blooms Mr. Rowe, gardener to Mrs. Lewis, Roehampton, was first with very fine examples of Prince Alfred, Lady Harding, J. Salter, White Globe, &c. Mrs. S. Dixon & Co., Amhurst Nurseries, Hackney, were a very good second. For twelve blooms Mr. Rowe was again first with Prince Alfred, Jardin des Plantes, Prince of Wales, Queen of England, Empress Eugénie, Lord Derby, Princess of Wales, Mr. Brunlees, Antonelli, Mrs. George Rundle, Princess Beatrice, and Lady Slade. Mr. Prickett, gardener to Mrs. Bowerbank, Stoke Newington, was second. For six Mr. Rowe was first, and Mr. Holmes, gardener to Mrs. Pannell, Upper Clapton, second. In the amateurs' classes the principal prizetakers were Mr. E. Sanderson, Mr. C. Sanderson, Mr. Slade, and Mr. F. Godwin.

In the "maiden" class B. B. Baker, Esq., 3, Palace Road, Roupell Park, Streatham, was first with magnificent blooms of Prince Alfred, Prince of Wales, Lady Harding, Princess Teck, Baron Buest, and White Globe. For Anemone-flowered, large and Pompon, Mrs. S. Dixon & Co., Amhurst Nurseries, were first. The same firm was also first for Mr. Shirley Hibberd's prizes for the best collection of plants, Mr. Monk being second, also first for six, and first for three specimens. These collections included fine plants of Dr. Sharpe, Mrs. George Rundle, Lady Harding, Annie Salter, and Prince of Wales. For six Pompons Mr. Monk was first with excellent specimens.

THE WILLOW OF SCRIPTURE.

I AM inclined to think that the Willow by the waters of Babylon is the Oleander, which is abundant in bloom on most

streams in Syria, and is said by travellers to have the appearance of the Willow.—R. H. WILLIAMS, *Byford*.

[Mr. Tristram, in his "Journal of Travels in Palestine," seems to be of your opinion, for he there speaks of "Oleanders, Willows by the watercourses, shading them from the sun;" and it is certain, as he also observes, that the Oleanders there become almost timber trees, "sometimes 25 feet high, with tall slim boughs borne down, like a Weeping Willow, by the weight of the blossoms." Yet the weight of authority is in favour of our Bible translation. *Arabim* and *Arebim*, the Hebrew word there rendered "Willow," the Septuagint and all other interpreters, we believe, sanction as the correct rendering. We are also told that the Arabs call the Willow *Garabon*, which approaches the Hebrew name.—EDS.]

NOTES AND GLEANINGS.

No one could fail to notice the admirable cut blooms of *CHRYSANTHEMUMS* exhibited by Messrs. Veitch at the Royal Horticultural Society's Meeting of the 6th inst., and which, taken as a whole, though they may in some years have been equalled by those who make a speciality of the flower, have never been surpassed by any collection from our great nurserymen.

—The mildness of the temperature at St. LEONARDS and its vicinity is demonstrated by *Tropæolums* being quite uninjured, and bedding *Geraniums*, *Veronica Andersonii*, *Mignonette*, and *Picotees* not only being uninjured, but in full flower in the open air, and unprotected, on the 9th of November! Five miles inland, on the other side of the Southdowns, all the abovenamed plants were struck down by the weather weeks since.

—We are glad to see the third edition is published of Mr. W. Paul's "The Rose Garden." It is the most comprehensive book on all that relates to the Rose and its cultivation.

WORK FOR THE WEEK.

KITCHEN GARDEN.

CLEAR away all decaying matter from Globe *Artichokes*, and protect them with leaves. *Cauliflowers* already headed should be carefully taken up and stocked in any dry pit under the protection of a wall, where a thatched shutter may be employed in unfavourable weather to ward off the wet. As many *Endive* and *Lettuces* as possible should be transplanted into frames, where they may be at least protected from rain. Sudden frost succeeding the late heavy rains will more injuriously affect the advancing *Salads* than any other possible circumstances of weather. Dig *Potatoes*; those which are taken at this period sound may be considered secure. Sow *Peas* and *Broad Beans* in rich soil on a warm border. A sowing of Short-top *Radish* may be made in a similar situation. Plant *Shallots* and *Garlic*. Shutters thatched with reeds or straw should be prepared for the protection of *Endive*, *Parsley*, &c., in showery weather. As soon as the leaves can be removed from *Sea-kale* plants, cover the crowns with wood ashes, or sand.

FRUIT GARDEN.

Gooseberry, Currant, and Raspberry pruning and planting should be in progress. An adequate quantity of cuttings of the first two should be put in every season to provide for possible losses. The due preparation of borders for the reception of fruit trees should be completed, and the trees planted in the course of the month. Pruning and nailing may be commenced. A judicious system of stopping in the growing season renders the first-named operation a comparatively light and easy task.

FLOWER GARDEN.

The weather now is comparatively favourable for executing alterations, and where these are in hand they should be prosecuted with the greatest possible dispatch. Planting, or the removal of large trees, cannot be finished too soon, for it is of the utmost importance that the plants should be afforded some chance of making fresh roots before the trying winds of March. See to even small plants being secured against winds, for they are often injured by being blown about after planting, which a small stake and a few minutes' work would prevent. Get in a stock of *Briars* for budding upon next season. Let the roots be well trimmed, cutting back closely the strong ones, for these, if left, will be of little use except to furnish an endless supply of suckers. Protect the roots of the *Tea* and *Perpetual Roses* with a coating of wood ashes or moss. *Fuchsias* may be preserved in the same manner. In the disposal of the various shrubs let the natural and peculiar disposition and character be duly considered—thus, the *Rhododendron* is seen with the greatest advantage at the base of a lofty tree, the dwarf evergreen of the mountains on a hill side, while low and swampy ground should

be characterised by such plants as *Heracleum giganteum* and some of the aquatic Grasses and Reeds. Amongst tall trees the common *Honeysuckle*, *Wild Hop*, and *Bramble*, may be introduced with excellent effect, or, when supported by stakes, some excellent effects may be managed by these. There have been few seasons of late years so unfavourable for the *Tulip-fancier*. In every part of the country there is the same complaint. We cannot plant, but we are now looking forward to a good planting time, though rather late. Amateurs, of course, have made up their beds, and are merely biding their time to commit their favourites to the earth. I would advise all growers to take the first opportunity and plant; every day that they are out of the ground the bulbs suffer. Carnations, as a matter of course, are in their winter quarters. Look over beds of seedlings; with a small hand-hoe keep the ground stirred whenever the weather permits of its being worked. Turn over *Ranunculus* beds, and expose every part to the action of frost. As for *Pinks* and *Pansies*, those in pots must have all the air possible; never close the frame except in excessive wet or hard frost. *Dahlias* are over for the season; cut off the stems about a foot from the tuber, and turn them upside down, so that the sap may freely exude. Allow them to get quite dry, and then store away in a moderately dry place secure from frost.

GREENHOUSE AND CONSERVATORY.

Some of the very earliest *Chrysanthemums* may probably be getting past their best, and these should be replaced at once by something of a more showy character. While the principal collection is in bloom a selection should be made of the best and most useful sorts, for there are many worthless varieties in cultivation, and it is better to grow duplicates of the really good kinds than to retain such as are but indifferent merely for the sake of having a long list of names. If the introduction of the larger decorative plants, such as *Chrysanthemums*, can only be managed by the displacement and crowding of the general stock, it would be better to restrict their entrance as much as possible. Crowding, at all times injurious, becomes at this season fatal to the appearance of many elegant plants, for what injury they may sustain now they have rarely the vigour immediately to overcome, and thus the blot remains. Beware of excessive moisture. Keep the surface soil of large pots open, and water only in cases of necessity; indiscriminate watering is a common and fatal error amongst amateur gardeners. Give timely attention to providing a succession of bloom with which to keep the conservatory gay, and avoid as far as possible the expense of hard forcing, which is, moreover, so very injurious to most plants. Be careful not to let the plants in bloom suffer from the want of water, giving clear weak manure water to *Chrysanthemums*, *Salvias*, *Camellias*, &c., and use every means to preserve the beauty of specimens in bloom as long as possible. Damp and mildew are the great enemies to be guarded against in the greenhouse, and these must be sharply looked after, especially in the case of plants that have not well ripened their growth, and are in a rather soft state. If the former is troublesome it must be got rid of by means of free ventilation on mild days, using a little fire heat at the same time, and for the latter a dry airy atmosphere is the best preventive; but the plants should be frequently examined, applying sulphur on the first appearance of the enemy. Very little water will be required here at present, but the plants should be carefully looked over about twice a-week, so as to make sure that nothing is allowed to feel the want of it. If not already done, get the plants tied with the least possible delay, for it is very difficult to tie a plant so that it will not look somewhat stiff and unnatural, and the sooner all this kind of work is done the better the specimens will look when in bloom.

PITS AND FRAMES.

In the treatment of the stock in pits and frames the abovenamed carelessness must be scrupulously avoided. Well-matured plants with no stagnant water about the roots, although under ordinary circumstances peculiarly susceptible of frost, will be found to resist its attacks. Plants of *Pelargonium Compactum*, which in a very exposed situation have not suffered from the effects of a frost of 8°, had been starved by limitation of water previously. Not far from the position they occupied other kinds of full and luxuriant habit in a more sheltered position were completely killed. From chance circumstances of this kind we may glean valuable hints.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Two fine days up to the 9th have given us a good opportunity to further earth-up *Celery*; to place full-grown, three-fourths, and half-grown *Lettuces* in frames; to sow *Radishes*; and to cover *Endive* for use three weeks hence. We have laid down rather rampant *Broccoli*, and have protection ready for a fine bank of *Cauliflowers*.

FRUIT DEPARTMENT.

We looked over the fruit-room. With us *Pears* ripen sooner

than usual, and Apples seem to come later. A few decayed fruit soon taint a room.

Orchard Trees.—Where there is plenty of room we have no doubt that orchards will continue to be planted, and it is very desirable to have the trees far enough apart to allow fine meadow grass for pasture to grow beneath them; there is something rather pleasant in gathering the fruit even after it has fallen on long soft grass. In all such orchards, when full-grown, the trees and crops will often be greatly improved, first by pruning-out all crossing branches, so as to leave the trees rather open in the centre; and secondly, if the trees are old, by scraping moss and lichen from their bark, and giving the stems and branches a good dressing with limewash. If the lime should be unpleasant to the eye, it could be mixed with soot or cow dung. To mix the soot well, if dry, it should first be brushed-up with a little water into a thick paste, so that every particle may be wetted before it is added to more water and the white-wash. This, too, is the only way in which dry flowers of sulphur can be thoroughly mixed with cold water. Just enough water should be used at first to make it into a homogeneous thick paste. For applying such mixtures as the above, a large whitewash brush is very good for the boles of trees; but for dispatch, and when smaller shoots and boughs are to be reached, nothing is so effectual as a syringe which has seen its best days. In small gardens, and where room is valuable, small bush or pyramidal trees will in every way be the best, most pleasant, most economical, most and soonest fruitful. What a comfort to be able to do almost everything for them—pruning, nipping, examining, gathering the fruit, &c., standing on *terra firma* instead of incurring the danger of ladders! For comfort and a great supply in little room, commend us to dwarf trees bristling with flower-buds. We have stated lately that the cheapest mode to secure this is to plant on mounds, give the necessary strength, and encourage the roots to keep near the surface by surface-mulching. We can hardly conceive anything more beautiful than such trees clothed with bloom, and again covered with fruit; and there can hardly be a more pleasing occupation for an amateur than thinning the fruit, nipping-in the shoots, and in a bad season removing encrusted or malformed fruit to give more assistance to what is really good, and all done so easily, without reaching or climbing.

We put on a brisk fire for the lateinery in the morning, with air all day, and little heat and less air at night, the object being to keep a somewhat dry moving atmosphere to prevent damping, and the latter, notwithstanding the quantity of rain, has hardly shown itself.

Other empty fruit houses are, after being washed and cleaned, crammed with plants. We stated lately that we brought off many of the leaves in *orchard houses* to give more light to under-crops. In one of these houses, damp season and altogether, Grapes ripened well, and we have cut the most of them, as in severe weather the frost might be too much for them when we could protect the under-crop. The ripening we attribute partly to the large panes of glass—20 inches between the rafter sash-bars. Such houses unheated are very useful. They would be still more useful, and under better command, when heated even by a simple mode, hot water being the best when the houses are large. When left unheated, the safety inside, when the house is shut up, greatly depends on the comparative stillness of the air. Another safety-valve for all fruits that open their blooms early, as Apricots, Peaches, &c., is retarding the bloom by giving all the air possible to such houses, except in severe frost. It will take a very severe frost to hurt such trees in bud with the close still air insured from a protection of glass. Of course, if in bloom, the trees would not stand anything like the same amount of frost. The cooler such unheated houses can be kept from now until the buds swell to opening, the more secure will the fruit be. We should have no difficulty in this matter if perforce we did not fill our orchard houses in winter with many other things that need protection. The principle aimed at, however, is to retard rather than to advance in winter. It is not the only case in which comparatively standing still is the best means of safety. Some years ago we saw a nice bed of *Calceolaria* cuttings in a cold pit struck and growing freely before ours were inserted. A very cold winter coming on, most of these fine-looking *Calceolarias* succumbed. We happened scarcely to lose a single cutting. The worst weather had passed before our cuttings made a single root. Want of growth was one cause of their safety. For a month the pit was covered with litter, and when carefully removed the cuttings looked much as if they had passed through an ordinary night. Let amateurs be convinced that it is not desirable to have fruit trees in cold orchard houses blooming too early, and one chief cause of failure will be removed.

ORNAMENTAL DEPARTMENT.

We find the mass of our beds in the flower gardens still untouched, *Geranium* leaves are still green, and we have gathered a few very fair blooms; there are still plenty of *Ageratums*, *Salvia fulgens*, yellow *Calceolarias*, &c. Our elevated position gives us the advantage of a later bloom than is generally found

in more sheltered valleys. The *Iresine Lindenii* was very fine with us, but after the cold rains the leaves dropped. We lifted a few large plants previously, as the colour of the leaves comes in well for dressing.

Centaurea.—We have taken up a few of the white-leaved *Centaureas* and placed them in as small pots as the roots would go into, after removing the larger leaves. They soon strike fresh root if they have a little mild bottom heat. If too much is given, the roots decay; if none at all, the plants will often look well enough for months, but when the time comes that you expect them to make fresh growth, they will go off and disappoint you. Even those which have a little bottom heat must not be taken out of it all at once after they are rooted, but be lifted by degrees, and then they will stand in a comparatively cold place if not overwatered. One advantage of having a lot of these old plants established with their fresh-made roots is, that by picking-out the centre of each shoot early in the spring, there will soon be numerous small sucker-like shoots that strike as freely as *Verbenas* in a hotbed, and have only to be hardened-off. Like many other things, however, such cuttings will make more progress in a hotbed in spring than they will do in weeks in the autumn in a cool place. For instance, we have seen *Calceolaria* cuttings make more progress in a fortnight in March and April in a close warm atmosphere, than they do, or we wish them to do, in three months when inserted in a cool place at the end of October or during the first fortnight of November.

These *Centaureas* may be easily raised from seeds, and some species and varieties come more true than others; but just as in the case of the *Cineraria maritima*, the white mealy tinge of the foliage is more to be depended upon from cuttings than from seeds. Wishing to have two strings to our bow, we generally take off rather strong cuttings in September, and remove most of the leaves, leaving only the small ones at the point, and insert the cutting close to the side of a small pot; or if we put two in a pot, each is fixed close to the side, and a bit of slate stuck down in the middle of the pot between them. This is chiefly done to prevent the roots of the two cuttings interlacing with each other. When thus taken off we place them in a cold pit or frame for a month, and by that time the base of the cuttings has begun to swell—technically to callus, and we then give them a genial bottom heat, and the roots push quickly. We then gradually harden-off. By this means there are few losses. If put into heat at once there is danger of damping-off. If continued in a cold frame we might wait as long for roots as we do in the case of *Calceolaria* cuttings, which would hardly suit us as respects room. Most of our plants, after rooting last season, stood the winter in the orchard house. It is very rarely that the *Centaurea* has stood out of doors with us, and when it has, it has been elevated so as to suffer little from damp. Many large plants out of doors seemed all right until examined in spring, and in most cases damp had been more injurious than frost.

We proceeded with thinning, pruning trees and shrubs, &c., and making preparations for new work and planting.—R. F.

TRADE CATALOGUES RECEIVED.

Kelway & Son, Royal Nurseries, Langport, Somerset.—*Catalogue of Gladioli*.

J. Dickinson & Sons, Newton Nurseries, and 108, Eastgate Street, Chester.—*Catalogue of Forest Trees, Ornamental Trees, Shrubs, &c.*

G. Shrewsbury, 59, Old Bailey, and Lower Norwood.—*Catalogue of Gas Heating Apparatus, &c.*

TO CORRESPONDENTS.

* * We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

BOOKS (*Anxious Inquirer*).—You can have the "Cottage Gardeners' Dictionary" from this office if you enclose 7s. 2d. in postage stamps with your address.

ROYAL HORTICULTURAL SOCIETY'S FRUIT SHOW (*W. Fowler*).—In our report we stated that you took the first prize. The mistake was the Society's in their advertisement.

MAKING MANURE OF HAY (*An Irish Subscriber*).—Your query is worthy of your countryman, Sir Boyle Roche—"How can waste hay or grass be made into dung where no animals are kept?" "Dung" implies excrementitious matter. You may best make the hay or grass into manure by wetting it, and mixing some lime and salt with it, and then making it into a heap with thin alternate layers of earth.

NEW ROSES OF 1872 (*Amateur*).—The best new Roses of this year, some of which we believe will prove valuable additions are:—*Lyonnais*, Mad. Georges Schwartz, Madame Bellon, Madame de Ridder, Madame Lefebvre Bernard, Monsieur Etienne Levat, President Thiers, Richard Wallace, Madame Françoise Michelson, André Dunand, Mad. Cécile Berthod (Tea), Comtesse de Nadailac (Tea), Souvenir de Paul Neron. The following are also good, though perhaps not so certain:—Madame de St. Pulgent, Madame Guillot de Mont Favey, Madame Thérèse de Parrie, Annie Laxton, Princess Beatrice. We are in hopes there are two or three other good English seedlings, besides the two last named, as Cheshunt Hybrid and Reynolds Hole, likely to prove a great addition to our English-raised Roses, and Bessie Johnson a sport from Abel Grand, which will take a place among light-coloured Roses, the sport being much lighter than Abel Grand.

PROTECTING WALL PEACH TREES (*J. B. M. C.*).—You are right as to the glass protecting coping being desirable; but as you object to it on account of the expense, and as it will not be a safeguard without some protecting material when the trees are in blossom and whilst the fruit is young, we advise you to have a coping board of inch deal not less than 11 inches wide, and projecting over the wall, so as to throw off the wet and prevent the loss of heat radiated by the wall; and to this you can fix tiffany, to be kept from brush against the trees by posts, at a foot or 18 inches from the base of the wall. No. 3 tiffany will be ample protection. It should only be used in frosty nights and days, but in mild weather ought to be withdrawn.

INSECTS AND WORMS IN MANURE (*A. M.*).—We do not know of anything so destructive to worms as lime water. It may be made by pouring three gallons of water over 1 lb. of quicklime, stirring well up, and allowing it to stand two days; then pour off the clear liquid, and water the manure with the latter, making all thoroughly wet. It will destroy every worm, but then the dung will need to be dried before it is fit for use. For mixing with the soil for plants it would be well to place the manure in an oven at a temperature of not less than 212°, and keep it there for half an hour. Quicklime dusted over the manure in turning, also soot, will make it obnoxious to many insects; but nothing is equal to heating in an oven or on a hot iron plate, turning and moving the manure, so as to keep it from becoming burned.—G. A.

SOIL FOR LAPAGERIA ROSEA—VINES FOR COOL GREENHOUSE (*A. C.*).—*Lapageria rosea* succeeds in rough fibrous peat with silver sand. The peat should be broken up moderately small, and the woody stems of the Heath, if any, should be removed, adding a sixth part of silver sand. The drainage should be quite efficient, as the plant requires copious waterings. The best two black Grapes for a cool greenhouse are probably Black Hamburgh and Trentham Black. Bowood Muscat would not, we fear, succeed in a cool greenhouse, it requires a vinery. If you wish for a white Grape, Foster's White Seedling is good.

TRAINING VINCA MAJOR ELEGANTISSIMA (*F. I.*).—The shoots need not be trained quite flat, but we should allow them to arch over, peg down the points so as to form a half-ball of the size you require, or you may form the shoots into a pyramid. We consider the half-globe form the best, with the shoots gracefully arched over.

GATHERING KITCHEN APPLES (*Idem*).—They are fit to gather when, being inverted, they drop, when they part freely from the stalk, or, when cut open, the pips are brown. You may cut back your ill-shaped Pear trees as you propose, and train the shoots upright. If, however, you cut to where there are only spurs, it is likely you may wait years before you can get a shoot to start at the place required. In pruning, therefore, make sure of a wood bud either at or near where you wish to originate a shoot.

CLEMATIS FOR ARCHES (*G. S. H.*).—*Clematis Fortunei*, John Gould Veitch, and Princess Mary are all sufficiently hardy to plant in the open ground and train to arches over flower-beds. They succeed best in light, rich, well-drained soil, with liberal dressings of manure.

POTTING-UP ROSES (*J. S.*).—The Roses having "done no good" planted out, we fear they will be very unsatisfactory in pots. As they are two years old you will need to pot them in 8 or 9-inch pots, and as they are on the Manetti stock the union of the scion and stock should be buried. We should cut the shoots back to within five or six eyes of their base if strong, or to three, or even two if weak. They should be potted at once, and pruned when you take them into the house, say in January, keeping them up to that time in a warm position or in a cold pit, the pots plunged to the rim in coal ashes. Your standard Niphetos, Safrano, Madame Falcot, and Marechal Niel would succeed admirably in pots in a conservatory.

FLOWER OF EDEN CARNATION NOT THRIVING—CATTLEYA HARRISONLE (*W. H.*).—We think if you were to add a fourth part of old hotbed manure and a third part of leaf soil to your loam, which we presume is of a strong gritty nature and full of fibre, the plant would grow more strongly and no doubt flower. If this do not effect the desired end we should raise fresh plants. If once plants of this class become weak they seldom return to vigour, and there is no hope but to raise fresh plants from cuttings or layers. The Cattleya ought to succeed in the temperature you name, which we apprehend is only that of the present or winter season. If it is, however, the summer temperature, it is very much too low. During the growing period the temperature should be 60° to 65° at night, 75° to 85° or 90° by day, with shade from bright sun. The atmosphere requires to be moist, also the block or pot on which the plant is growing. In winter it should have a drier atmosphere, and no more than a sprinkling of water occasionally to keep it from shrivelling. In winter a temperature of 55° at night and 65° by day, with a rise from sun heat to 75° or more is suitable.

AUTUMN RASPBERRIES NOT RIPENING (*Kenilworth*).—We presume you cut down the canes in February close to the ground, as advised by Mr. Rivers, and thin out the shoots in May, or rather pull up the weak ones, leaving the strong 1 foot apart; but as they show abundance of fruit late in autumn which do not ripen we should say the climate is too cold. It may, however, be a result of wet and cold soil. Plant in a light soil, and warm exposure, but unless you practise in the southern counties we fear your chances of success are small.

CELERY OVERGROWN (*Idem*).—This season, though large, Celery is not of very good quality. The stalks are hollow, and the centre stem is much more advanced than we are accustomed to expect at this season. We have about half a dozen sorts, and there is very little difference in them. The best is

Sandringham Dwarf White. We attribute it to the long-continued and extreme moisture of the season.

CONIFERS FOR DAMP SITUATION (*Coniferae*).—The only subject that does well with us is the Norway Spruce (*Abies excelsa*), which roots very near the surface, and attains noble dimensions. We have many trees on such a soil as you describe, associated with Huntingdon Willow, Weeping American, and Kilmarnock Willows, Weeping Silver, and Cut-leaved Birches, Alder, Scarlet, and Variegated Dogwood, *Deutzia scabra*, and Guelldres Rose. The White Poplar succeeds well, and is very effective when coming into leaf.

MAKING A ROSE-BED (*A Five-years Subscriber*).—Your proposed plan is good—namely, to trench the ground 3 feet 6 inches deep, take the clay out, and put in about 9 inches of brickbats and lime rubbish at the bottom for drainage, then mix the marl and loam together with some good stable manure and a few crushed bones. We presume you have provided a drain to the bed, below the drainage, to carry off the superfluous water; if not, you will need one, otherwise your bed will only be a pit to hold water; and we have further to suggest that you add "strong fresh turfy loam" to your other ingredients equal in amount to the clay removed, which will raise the bed considerably. The bed should be 1 foot higher than the surrounding ground level, as from the depth of the loosened material it must settle considerably. We would commence operations at once, and plant this month or early in the next, mulching well with littery manure after plantings. The Hybrid Perpetuals will probably thrive in your bed remarkably well.

CONSTRUCTING A FERNERY (*Little Lady*).—Having the fernery sunk is good, and will be a means of securing more uniform moisture, and there will be a considerable accession of warmth. As to the arrangement, we should form the sides into a rockery all round, except the doorway, and have it jutting out in some places and receding in others, arranging the stones firmly so that there will be no danger of their slipping, and varying the height of the rocks as much as possible, so as to give a rugged aspect. In building the rocks we would leave some good-sized pockets, crevices, and ledges, in which soil could be placed for the plants. In the centre, or on one side, you can introduce a miniature waterfall, with a basin of water at the foot, and fountain playing from it; but, though we have a fountain in our fernery, we consider it would have been well omitted. The best stone we have used is an open soft-grained freestone, and the next best is probably sandstone. Pebbles or stones with a close flinty grain are not good. Materials from the limestone formations are very good, especially petrifications. Avoid all stones with a smooth hard face, they are slow in becoming covered with moss, and the seedling Ferns do not take to them freely.

STOVE FOR AN ORCHARD HOUSE (*R. T. F.*).—After the buds of trees begin to swell we object decidedly to any stove or any fuel that does not carry into the open air by means of a chimney the products of combustion. A good-sized iron stove with the conditions frequently and lately referred to, would suit your purpose best, as you could remove it easily when not wanted. A metal pipe 4 inches in diameter would make a good chimney if frequently swept.

TREES FOR AN ORCHARD HOUSE (*T. W., Shrublands*).—If you have not already the Pears against the back wall we would substitute Peaches and Nectarines in their place, or even late Plums, as Coe's Golden Drop. For an early and late Peach we would select Grosse Mignonne and Walburton Admirable. The Cherries, Plums, &c., will do well, but in so small a house the back wall is rather too good for Pears. We have had them fine even in pots, but the flavour was apt to suffer.

REPLANTING A VINERY (*A Constant Reader*).—If well done Vines may be planted at any time, the times requiring least trouble are October and March. Young Vines grow away well, but for ourselves we would prefer taking up nice Vines four years planted, and replanting them carefully, to young Vines. If the job is to be done, the sooner it is done the better. The Vine roots should be carefully lifted and kept damp before replanting, spreading them out nicely, and by mulching afterwards, keep the soil warmer than the air of the house until the buds break.

VARIOUS (*A Reader*).—The Scilla under the glass of your *jardinière* will require more free exposure to air than will suit the *Adiantum* and *Selaginella*. We would remove the Scilla. For the arrangement of your beds with such variety we would plant on the mixed plan without any definite arrangement, though the back and centres of groups may easily be made to pair or contrast. We have far too little knowledge given to us to be able to judge; and then, though ready to advise and criticise, we cannot undertake to plant gardens. If the place is small the best plan is to give a small space to each favourite, and arrange chiefly by colour and height.

FLOWER-BEDS (*D. C.*).—The looking-well will depend much on the bank of grass not being too steep. The planting would do, but we would alter the four 1's by surrounding *Irisine Lindeni* with yellow, and the four 2's, yellow *Calceolaria*, with *Viola cornuta* Perfection. The rest as stated.

LILIUM GIGANTEUM CULTURE (*Idem*).—It requires treatment similar to other Lilies. Should not be kept quite when at rest. Should have a good crown preparatory to throwing up a strong flower-stem, and then should be fed with manure water, as the stronger the stem the finer will be the flower pyramid.

PRUNING ROSES (*G. B.*).—For flowering in the last week of June we should prune all the Hybrid Perpetuals and Bourbons now, and the Noisette and Tea-scented in February. We should have preferred ashes to litter for plunging the pots in, but the latter will answer, though not so well. We should have plunged in ashes in a cold pit, with, for the Tea-scented varieties, some protecting material over the lights in severe weather, removing it and exposing fully in mild weather, but not during rain. We should not only winter but grow them in cold pits, or in such a position that they could be protected from frost and heavy rains, exposing fully in mild fine weather. Give top-dressings of rich compost, and water, after the buds show until the flowers expand, with weak liquid manure at every alternate watering, sprinkling overhead twice daily—*i.e.*, morning and evening, from the commencement of growth until the buds show colour, then leave it off.

ROSE (*A Subscriber*).—There is no Rose called Celeste Forestier. Céline Forestier is meant.

VALLOTA PURPUREA TREATMENT (*An Amateur*).—The treatment required by this plant will be found at page 294 of the number for October 19th, 1871.

NAMES OF FRUITS (*R. W. H.*).—2, Doyenné du Comice; 3, Beurré Bronze; 4, Doyenné Rouge; 5 and 6, Quite rotten. (*J. Howard*).—If you send us specimens we will endeavour to identify them. We cannot afford space for descriptions.

NAMES OF PLANTS (*G. A.*).—*Adiantum cuneatum*, Wedge-leaved Maiden-

hair Fern. (*Lady King*).—A *Gesnera*, near *G. polyantha*, DC., and perhaps a form of that species. (*R. Maitland*).—1, *Dicksonia* (*Cibotium*) *Barometz*; 2, Probably *Nephrodium patens*; 3, *Polypodium* (*Goniophlebium*) *appendiculatum*; 4, *Asplenium* (*Athyrium*) *umbrosum*. (*E. L. H.*).—Yes, *Tecoma jasminoides*, of which *Bignonia jasminoides* is a synonym. (*Anxious Inquirer*).—1, Not in fruit; 2 and 3, Varieties of *Scolopendrium vulgare*; 4, *Polystichum aculeatum*.

POULTRY, BEE, AND PIGEON CHRONICLE.

A COUPLE OF HOURS WITH THE DARK BRAHMAS AT OXFORD.

So much time has elapsed since your insertion of my last communication, that the ink has become hardened on the nib of my "grey goosequill," and, as I resume again the use of my "poultry pen," it seems by lack of practice to have well nigh lost any little cunning it may have possessed. But, notwithstanding this and the prolonged pause in my correspondence, I want to tell you a "bit of my mind" in reference to the first Oxford Show, held on October 30th and 31st.

Well, on the advent of the former day I left my quiet home in a Somersetshire village, in the "grey dawn of the morning," to proceed to the classic city, to see for myself how far it could hold its own in its first attempt to make a figure in the world of poultry. As far as the weather was concerned it was a miserable day; the pitiless rain poured down from early morn to noon, and from noon to gloomy night—straight down in monotonous and well-nigh mathematical precision from the leaden clouds above; no break in the steady downfall; no ray of sunlight to pierce through the murky atmosphere. In vain the weary traveller sought for a more encouraging prospect in the shape of a break in the clouds. No such vision of hope met his anxious gaze—only the same grim, moody, weeping prospect.

"Water here, water there,
Water, water, everywhere."

You will admit that a journey even to Oxford, under such circumstances, did not present features of a very lively character, and as I drew near the city of ancient and modern learning and renown, my sympathies were in active exercise with the local promoters of this initiatory Show. I soon wended my way through the wet and dripping streets, and was not long in finding the temporary lodgment of my feathered friends. I paid my half-crown entry fee with all the newly-acquired dignity of a virgin exhibitor, and entered the noble building which, for the first time in its history, was resounding with the fierce notes of defiance through the throats of hundreds of valiant cocks; from the hoarse guttural groan of the huge and unwieldy Cochins, to the shrill and piercing cry of the Game and conceited little Bantams. As I entered I was struck with the evident care and attention which had been devoted by the Committee to make the arrangements as perfect as possible; and here let me say that the Secretary, Mr. King, so far as my experience went, so distinguished himself by his courtesy and manifest desire to oblige and please, that I can only hope he may be spared to fill the same onerous, but often thankless, post for many a long year to come. The building is admirably adapted to the purpose of a poultry show—being very lofty, well lighted, and, judging from the state of the internal atmosphere, efficiently ventilated.

On entering the hall I was soon in front of the pens which contained my favourite variety; and as I stood before those which, side by side, had won the highest honours, I could not help admiring the magnificent birds to which the first and second prizes had been so justly awarded, though I must confess the vexed question of hocks would intrude itself on my consideration as I gazed and admired. These noble birds stood out to the front like very monarchs of the poultry yard; but as I moved on and attentively examined the pens to which the other honours of various degrees had been awarded, I became perplexed, and found the inquiry revolving in my mind whether or not there was any advantage at these shows in possessing a reputation—so much so, that I involuntarily uttered the wish that the judging could be entirely freed from any possible influence of this kind, by keeping the Judges in utter ignorance of the names of all the exhibitors until after the awards had been made. Without intending in the slightest degree to cast any reflections on the Judges, for whom I have, as a rule, a high respect, yet they are only composed of the same impressive materials as other ordinary mortals. It is said "the rose by any other name would smell as sweet," yet somehow or other there is a prestige in its name which yields an influence, unconscious though it may be, and we are always involuntarily predisposed to accord to it a very high commendation on account of its simple nomenclature. As a class I was disappointed with the general features of this display of my favourite race, and considered the specimens, as a whole, much below an average, though redeemed by a few respectable birds here and there, and the immeasurable superiority of the first and second-prize pens. The commendations were a matter of wonderment

to me, and, as a friend remarked, there must surely have been some "sweet little cherub aloft" who had surreptitiously purloined all the cards from below, and mischievously flung them down to distinguish the pens on which they might happen to alight. It was really difficult to conjecture on what grounds such commendations were given to some of the birds that obtained this distinction, as compared with others of unquestionably higher quality. Of one pen in particular, containing a huge cockerel of an almost sky-blue speckle, with a pullet to match, a facetious friend declared that it had been "commended" for its "unadorned ugliness." I have always thought it a great mistake for the judging to be proceeding during the presence of a crowd of spectators, and I was most forcibly confirmed in this opinion by my observations at Oxford.

I may add that the Dark Brahmans were scarcely placed to advantage so far as the light was concerned, and the pens were cramped and small for such large birds; but the care and attention that were paid to the exhibited poultry in general, and the special efforts that were made in particular by the Committee and their Secretary, to accommodate and please both the exhibitors and the public who paid for admission, determined my intention to do my best to put in an appearance again in both capacities at the next Oxford Show.—BRAHMA.

DEALERS AND SHOWS.

I ALWAYS read in the Journal anything from the pen of Mr. L. Wright with pleasure and profit, and I have no doubt his article upon the above subject will have been read more than once by many who are interested in the matter. I have not a word to say in opposition to what Mr. Wright has written, but wish to add thereto. As to the necessity of such additions no doubt opinions will differ.

I have no desire to exclude a dealer's birds from any exhibition, but would rather have their numbers increased, because dealers usually exhibit first-class specimens, which are oft-times purchased from amateur breeders who never exhibit, and were it not for the spirited dealer such birds would never be seen except by the privileged few; they also keep up the price of good birds, as I find that the professional dealer is always willing to give a fair price for a good bird. I fully approve of the selling classes as recommended by Mr. Wright, if carried out so as to answer the purpose intended—viz., that anyone shall have the opportunity of purchasing a good bird at a fair price: but in the regulations of one, if not both the shows named there is a clause which neutralises the advantages professedly offered by such classes—i.e., All birds receiving prizes or commendations will be sold by auction, &c. With a clause like that the idea of a selling class at a fixed price is a farce.

I remember visiting an exhibition where a very tempting prize was offered for the best pen in the selling class, "price not to exceed £2." I saw the first-prize birds in that class were such as I should be glad to secure for £5, but I could not claim them because they were to be sold by auction. I watched the sale of those birds, and the owner bought them in for £10. One gentleman present expressed his surprise, and said he thought it was not fair to other exhibitors that such birds should be entered in a selling class with the view of winning and buying in. The answer made by the owner was, "Do you think I am such a fool as to let them go?" I repeat, that if the birds in a selling class, because good enough to win, are to be sold by auction, then restricting the price in the catalogue is a mere farce.—L. WREN.

TO ALL NEGLIGENT SECRETARIES.

We were glad to see an exhibitor take up the subject of secretaries not sending catalogues until after the show. Only last week we sent for a catalogue to a show at which we were exhibitors; the birds were judged on the Wednesday, we got them home on Saturday at noon, and the catalogue on Sunday morning. Now, it ought not to have been later than Friday morning. We received one from Oxford the morning after the first day's Show, and if the secretary is too busy on the first day, he ought to give one of the committeemen a list of those that have sent for a catalogue, and forward it as soon as the awards are printed.—A. & B.

DURHAM PIGEON SHOW.—The entries for this Exhibition close on the 21st inst. We recommend it to the attention of Pigeon fanciers, for the prizes are liberal—three in each class, and in addition there are four silver cups and eight gold medals. The voting for Judges is a new feature, and we shall be obliged by information as to how it works.

DUNDEE POULTRY SHOW.—We like the business-like details of the schedule—the naming the Judges, Messrs. Hewitt and Tebbay; the qualified person to attend to the fowls, the liberal three

prizes to each class, the six three-guinea cups in addition to the money prizes, and the promise to remit the prize money within ten days. Let exhibitors look to the advertisement and make their entries. In addition, a silver champion cup of the value of £10 10s. has been subscribed, and will be given for the best pen of birds exhibited.

NEWCASTLE-UPON-TYNE POULTRY, PIGEON, AND CANARY SHOW.

THE annual Exhibition was held in the Corn Exchange, Newcastle-upon-Tyne, on the 7th and 8th inst., and was, without doubt, the best show that has ever been held in the north of England, both as regards quality and numbers. The Committee and Secretary (Mr. H. O. Blenkinsop) worked with a will, and no doubt it is to the exertions of these gentlemen the success of the Exhibition may be attributed. The penning, feeding, &c., was under the management of Mr. Sims, of West Cramlington, to whom great praise is due for the very admirable manner in which the wants of the birds were attended to; indeed, it is very seldom we have ever seen so much care taken of the specimens as was the case on this occasion. Wednesday was set apart for judging, and Thursday and Friday as the exhibition days. The weather being very clear and fine, we fancy the Exhibition will have proved a success in a pecuniary point of view. The entries for poultry numbered 400 pens, and Pigeons about 750. In poultry the pen consisted of a pair—cock and hen. In Pigeons all were single birds, except in one of the Selling classes.

Cochins were fair classes. In adults first and cup went to a capital pair of Whites, second came Dark Buffs; in chickens the same exhibitor was second with a good pen of Buffs. *Brahma Pootras* were two good classes. The first-prize chickens are birds of very good quality, but scarcely in show condition, appearing to be overworked; the second-prize chickens were a very nice pen, good in colour and shape, but the cockerel rather small. *Dorkings* were only moderate classes; there were, however, a few nice pens, noticeably the first-prize adults. The adult *Spanish* were hardly up in condition, it being rather too early. The first-prize old hen struck us as being something out of the common run; she was a grand bird. Chickens were only a moderate lot. *Polish* were well represented, a pen of splendid Golden taking the cup given for Spanish or Polish. The *Game* classes were well filled with capital birds, but the pick of the lot was unquestionably the pen of Brown Red chickens to which the cup was awarded. We do not remember having seen a better pen, and understand the birds were claimed by a noted exhibitor; we imagine they will be soon heard of again. *Hamburghs* were first-rate classes, especially the chickens; it is somewhat early for old birds, they not having recovered from moulting. The cup given for the best pen of *Hamburghs* was awarded to a very perfect pen of Golden-pencilled chickens. The *Game Bantam* classes were also of a high order. These birds must be great favourites in the north, for a reference to the catalogue shows that a great number of the entries were from the immediate neighbourhood. The first-prize old Reds were a good pen of Black Reds. In chickens a fine pen of Black Reds, excellent in colour and style, took first and cup. In Any other colour, adults, first were beautiful Piles, second Duckwings; in chickens, first a good pen of Duckwings. In Any other variety of Bantams, the first were good Blacks, second capital Silver Sebrights. Single cock Bantams any variety, first a good Black Red, a pretty Rose-combed Black second.

Ducks were divided into two classes only. Amongst the Aylesburys were a few good pens, but the first were greatly ahead of the rest. In other classes excellent Rouens were first, Whistlers second. In the Any other variety class Black *Hamburghs* were first, Crève-Cœur second. Selling classes were divided, one for 40s. birds, the other for 30s., and both were well filled. The birds in these classes were put up by auction, the surplus, if any, being divided between the exhibitor and the Society. This is a capital plan, for the classes serve their legitimate purpose—namely, the sale of surplus stock, and not merely for winning the prizes with birds worth four times the money, which are often bought in again—a proceeding manifestly unfair to the exhibitor who enters his stock for sale.

The *Pigeon* classes were unusually large, and contained many of the best specimens to be found in the country. In Carriers Messrs. Fulton, Stanley, Massey, and Horner exhibited splendid birds, the cup for this department falling to Mr. Fulton's grand black hen. The Pouter entries were less numerous, but each colour was well represented, the most noticeable being Mr. Fulton's cup Yellow hen and Mr. Grant's fine white cock. Short-faced Tumblers were a fine collection, the cup going to a beautiful Almond cock. In Almond hens there was not an inferior bird; while in Tumblers Any other colour Messrs. Blenkinsop and Fulton took the first prizes in each class with capital Yellow Agates. In Barbs the prizes for the best cock went to finely developed Black and Red respectively, while in hens a splendid Dun took first and Black second, nearly every pen in the

two classes being considered worthy of notice. In Foreign Owls the prizes were taken by Whites, good Blues and Blacks also competing. English Owls numbered forty-one pens, Mr. Edge taking the cup with his fine old White cock, a good Silver being second. Trumpeters were divided into Mottled and Any other colour, and were unquestionably the finest ever brought together, comprising a second batch of recently imported Russian birds. All the prizes were taken by this variety, the rose and crest of each bird being of the most extraordinary dimensions, though in some of the competitors there was a slight deficiency of feather on the feet. In Any other colour than Mottles, Blacks took the prizes. The sectional cup was awarded to a wonderful Black Mottled cock good in every point. Fantails were a large entry, Messrs. Walker, Rule, and Yardley taking the leading positions with birds of exquisite shape and carriage in a close competition. Jacobins were a pretty lot; the cup went to Mr. J. Thompson for a very fine rich Red. The class for Blacks was singularly large and good; while for Jacobins, Any other colour, Mr. Van Haansbergen had first with a beautiful White, a good Blue taking second. Turbits were divided into four classes, and had ninety-nine entries, Yellow, Red, Silver, Blue, White, and Black all taking positions, many of the pens being of great excellence. *Maries* were an average lot. Nuns were good, the cup in this section going to a particularly fine clear Yellow. Dragons had three classes, with a competition seldom exceeded. The sectional cup was taken by Mr. Sefton with a Blue excellent in every respect. Many of the Yellows, Reds, and Whites were also remarkably fine. In Antwerps Mr. Wright's splendid Red-chequered Short-faced cock took the cup in a good class. Any other variety was not particularly attractive, Ice first, Yellow Swallows second. The following is the prize list:—

COCHINS.—1, Cup, and 2, G. H. Proctor, Durham. *hc*, H. Lloyd, jun, Hands-worth. *c*, D. Ibbotson, Whithy. *Chickens*.—1, G. H. Proctor. 2, J. Webster, West Sleekburn. *hc*, J. M. Derry, Wisbeach; H. Lloyd, jun. *c*, E. Fearon, Whitehaven.

BRAHMA POOTRAS.—1, E. Pritchard, Tottenhall. 2, T. F. Ansdell, Cowley Mount, St. Helen's. *hc*, R. Henderson; J. M. Atkinson, Alford, Lancashire; H. Beldon, Giltstock. *Chickens*.—1, T. F. Ansdell. 2, H. Beldon, R. Brownlie; H. Smith, Hyde; J. N. Lawson, Sunderland; J. F. Smith, Sheffield; J. W. Brockbank, Kirsanton.

DORKINGS.—1, J. White, Warlaby. 2, N. Russell. *Chickens*.—1, E. Barker, Stokesley. 2, Countess of Tankerville. *hc*, J. J. Waller; E. Fearon.

SPANISH.—1, H. Beldon. 2, W. Jagers. *hc*, H. Wilkinson, Earby. *Chickens*.—1, J. Bowness, Newchurch. 2, J. Youngusband, North Shields. *hc*, S. Robinson, Brotheron, Ferrybridge; D. Waugh, Melrose Mills. *c*, H. Wilkinson, Bolton. *3*, J. P. Unsworth. 2, W. Beatpark, Ainderby. *Chickens*.—1, E. A. Lloyd. *Any other Variety*.—1 and Cup, H. Beldon. 2, P. Unsworth, Newton-le-Willows. *hc*, P. Unsworth; H. Beldon.

GAME.—Black or Brown Reds. 1, J. Mason, Worcester. 2, J. Bell, West Sleekburn. *hc*, J. Vickers. *c*, J. Gibson, Stanhope. *Chickens*.—1 and Cup, E. Winwood, Worcester. 2, J. Fletcher, Stoneclough. *hc*, Morris & Woods; J. Nelson. *c*, T. Robson.

Any other Variety.—1, J. Rowell, Newcastle. 2, J. Fletcher. *hc*, Morris & Wood, Accrington; J. Fletcher. *Chickens*.—1 and 2, J. Fletcher. *hc*, L. Casson, Ulverstone; J. Robson.

HAMBURGHS.—Golden-spangled. *Chickens*.—1, Countess of Tankerville. 2, R. H. Ashton, Mottam. *hc*, H. Beldon.

HAMBURGHS.—Silver-spangled. 1, Countess of Tankerville. Ch. Lingham. 2, H. Beldon. *hc*, Ashton & Booth. *Chickens*.—1 and 2, H. Beldon. *hc*, Ashton & Booth; Mottam; Countess of Tankerville; J. Bowness, Newchurch.

HAMBURGHS.—Golden-pencilled. 1, H. Beldon. 2, Countess of Tankerville. *Chickens*.—1, Cup, and 2, H. Beldon. *hc*, Ashton & Booth; J. Bowness; D. Cheyne, Blyth; J. Russell.

HAMBURGHS.—Silver-pencilled. 1, H. Beldon. 2, Countess of Tankerville. *Chickens*.—1 and 2, H. Beldon.

GAME BANTAMS.—Black or Brown Reds. 1, W. F. Entwistle. 2, W. Rodgers. *hc*, R. Baines, Widopen; R. Brownlie. W. F. Addie, Fulwood; J. Barlow; T. Robson. *c*, Morris & Woods; Miss M. Short. *Chickens*.—1 and Cup, Dobson & Hunter. 2, R. Youll, Sunderland. *hc*, J. R. Robinson; W. W. Gray; T. Bowker. W. F. Entwistle, Bradford; G. Hall; Wardle & Bruce, Gosforth. *c*, W. F. Addie; R. Brownlie; G. Hall; H. Pickering.

GAME BANTAMS.—Any other Colour. 1, W. F. Entwistle. 2, J. Ross. *hc*, Bellingham & Gill. W. W. Gray; W. F. Entwistle. *Chickens*.—1, G. Hall. 2, R. Baines. *hc*, R. Youll; W. F. Entwistle; W. Rodgers, Sunderland; J. A. Brooke, Leeds. *c*, W. F. Entwistle.

BANTAMS.—Any other variety except Game. 1, J. Nesham, Bedlington. 2, M. Leno, Markyate Street. *hc*, R. H. Ashton (2); H. Beldon; T. P. Carver; J. Watts, King's Heath, Birmingham.

BANTAMS.—Any variety. 1, G. Hall. 2, H. Beldon. *hc*, M. Leno; J. Archbold, Earlstrom; W. Banton; W. F. Entwistle; Wardle & Bruce. *c*, Wardle and Bruce.

DUCKS.—Aylesbury. 1, Miss F. Wilson, Morpeth. 2, T. P. Carver, Borough-bridge. *hc*, T. Stansfield; J. Meikleum; W. Paitie, Castlewards, Dumfries. *c*, J. Rowell.

DUCKS.—Any other Variety. 1, W. Swann. 2, M. Leno. *hc*, Countess of Tankerville; J. J. Malden; R. Gladstone, jun., Broadgreen, Liverpool; P. Unsworth; G. F. Norvel, Swallow; Miss F. Wilson. *c*, J. Nelson; J. W. B. Rank.

ANY OTHER VARIETY.—Geese and Turkeys excepted. 1, W. J. Thompson. 2, Mrs. J. Cross. *hc*, J. Watts; J. Meikleum, Hamilton; J. Maule. *c*, J. J. Malden; J. Bowness.

SELLING CLASS.—Price not to exceed 40s. per pen. 1, H. Beldon. 2, J. Bowness. 3, T. P. Carver. *hc*, G. H. Proctor; J. Nash, Walsall; H. H. Thompson; J. Russell.

SELLING CLASS.—Price not to exceed 30s. per pen. 1, H. Beldon. 2, W. J. Corner. 3, W. J. Thompson. *hc*, G. H. Proctor; W. J. Corner; Countess of Tankerville; J. W. Allison, Newcastle. *c*, J. Russell.

PIGEONS.

CARRIERS.—Black. Cock. 1 and 2, R. Fulton, New Cross. *hc*, E. Horner, Harewood. *hc*, W. Massey, Spalding; A. Anderson. *c*, H. Cockton, Middlesbrough; S. A. Wyllie. Hen. 1 and 2, R. Fulton. *hc*, J. Stanley, Blackburn; E. Horner. *hc*, E. Horner. *c*, Hon. E. C. Shore, Northallerton.

CARRIERS.—Any other Colour. Cock. 1, J. Stanley. 2, E. Fulton. *hc*, H. Cockton; E. Horner. Hen. 1, R. Fulton. 2, E. Horner. *hc*, W. Massey. *hc*, J. H. Watkins, Hereford.

CARRIERS.—Chickens. 1, W. Massey. 2, E. Horner. *hc*, H. Cockton. *hc*, T. H. Dows, Boston; R. Fulton (2); J. Stanley; E. Horner. *c*, W. Ridley; C. H. Clark.

POUTERS.—Blue or Black. Cock. 1 and 2, R. Fulton. *hc*, T. Rule, Durham; E. Horner. Hen. 1 and 2, R. Fulton. *c*, T. Rule.

POUTERS.—Red or Yellow. Cock. 1 and 2, R. Fulton. *hc*, A. Wright, Morn-

ingside; E. Horner. *c*, A. Anderson; T. H. Dows. *Hen*.—1 and 2, R. Fulton. *hc*, E. Horner.

POULTRY.—*Any other Colour.*—*Cock*.—1, J. Grant. 2, J. P. Fawcett, Whitby. *hc*, J. Thompson; A. Frame; A. Wintour; E. Horner. *Hen*.—1, R. Fulton. 2, H. Pratt, Birmingham.

TUMBLERS.—*Short-faced Almond.*—*Cock*.—1, R. Fulton. 2, J. Fielding, jun. *hc*, R. Fulton; E. Horner (2). *Hen*.—1, R. Fulton. 2, J. Fielding, jun. *hc*, W. Dryden, Dunse; R. Fulton; E. Horner; R. & J. Anderson, Newcastle.

TUMBLERS.—*Any other Colour.*—*Cock*.—1 and 2, R. Fulton. 2, W. R. & H. O. Blenkinsop, Newcastle. *hc*, E. Horner; W. R. & H. O. Blenkinsop. *Hen*.—1, W. R. & H. O. Blenkinsop. 2, R. Fulton. *hc*, W. R. & H. O. Blenkinsop; W. Sefton, Blackburn; R. Fulton; E. Horner (2). **BARDS.**—*Cock*.—1, R. Fulton. *hc*, R. Wade; J. Fielding, jun.; E. Horner; J. P. Fawcett. *Hen*.—1, R. Wade, Halifax. *hc*, E. Horner. *hc*, J. Fielding, jun.; R. Fulton (2); J. Stanley.

OWLS.—*Foreign.*—1, J. Fielding, jun. 2, R. Fulton. *hc*, W. R. & H. O. Blenkinsop; C. Dennison, Halifax; S. A. Wyllie, East Moulsey; J. Fielding, jun.; P. H. Jones, Fulham.

OWLS.—*English.*—*Cup*, J. W. Edre, Erdington. 2, J. Chadwick, Bolton. *hc*, A. Ashton; J. Dye, Hexham; J. E. Spence, Broughty Ferry; J. Chadwick (2); J. Thresh, Bradford; A. N. Dadds, North Shields. *c*, T. Swinbank.

TAUPETTES.—*Mottled.*—1 and 2, R. Fulton. 2, W. B. Van Haansbergen, Newcastle-on-Tyne. *hc*, R. Fulton; E. Horner. *hc*, Miss E. M. Beveridge, Ayr. 2, R. Rule; W. B. Van Haansbergen; E. Horner. *Any other Colour.*—1, R. Fulton. 2, E. Horner. *hc*, R. Rule; W. B. Van Haansbergen; R. Fulton. *c*, W. Gamble.

FAN-TAILS.—*White.*—1, J. Walker, Newark. 2, T. Rule. *hc*, J. F. Loversidge; R. Blair, Thornhill; W. H. Tomlinson, Newark; H. Yardley, Birmingham. 2, J. Walker; W. B. Van Haansbergen. *Any other Colour.*—1, H. Yardley. 2, W. E. Dryden. *hc*, W. Dryden; J. Kemp; T. Rule.

JACOBS.—*Red or Yellow.*—1 and 2, J. Thompson. 2, T. Rule. *hc*, W. E. Easton, Hull; W. R. & H. O. Blenkinsop; R. Wade; J. Thompson; W. Kitchen, Whitehaven; T. Rule; A. A. Vander Meersch, Footing.

JACOBS.—*Black.*—1, E. Horner. 2, R. Fulton. *hc*, R. W. Smith; J. Thompson, Bingley. 2, R. Rule; E. Horner. *Any other Colour.*—1, W. B. Van Haansbergen. 2, T. Rule. *hc*, R. Fulton; A. A. Vander Meersch.

TURBOTS.—*Red or Yellow, Point-headed.*—1, G. Fletcher. 2, O. E. Cresswell, Bagshot. *hc*, J. G. Orr, Belth; W. Croft, Ripley; J. Stephenson, Gateshead; Mrs. J. Muir; O. E. Cresswell; R. Fulton; H. Beldon; W. Lumb, Rochdale. *Any other Colour.*—1, L. H. Ricketts. 2, R. & J. Anderson. *hc*, R. Fulton. *hc*, E. Dew; W. Croft; W. & G. Cutler, Sheffield; J. Fielding, jun.; W. B. Van Haansbergen.

TURBOTS.—*Red or Yellow, Shell-crowned.*—1, H. Yardley. 2, R. Fulton. *hc*, J. Nash; W. Croft; W. B. Van Haansbergen. *Any other Colour.*—1, W. Croft. 2, W. J. Donkin, Newcastle. *hc*, W. Ridley, Hexham; J. Thompson; W. B. Van Haansbergen.

MAGPIES.—1, M. Ord. 2, E. Horner. *hc*, A. Anderson; J. Stephenson; W. Kitchen; R. Fulton; J. W. Edre.

NUSS.—*Black.*—1, E. Horner. 2, W. Croft. *hc*, W. E. Easton; W. Croft; P. H. Jones. *Any other Colour.*—1 and 2, H. Beldon. 2, W. B. Van Haansbergen. *hc*, T. Imrie, Ayr; E. Horner.

DRAGONS.—*Blue or Silver.*—*Cup*, W. Sefton. 2, W. Markland. *hc*, A. Jackson, Bolton; W. Lund, Shipley; W. Sefton; E. Horner; A. N. Dadds. *Red or Yellow.*—1, J. Ashworth, Blackburn. 2, A. Jackson. *hc*, A. W. Wren, Lowestoft; J. Watts. *White, or any other Colour.*—1, R. Fulton. 2, P. H. Jones. *hc*, F. Graham, Birkenhead. *hc*, E. T. Dew; J. Watt.

ANTWERPS.—*Short-faced.*—1, Cup, and 2, H. R. Wright. *hc*, F. Woodhouse; W. Lumb. *Long-faced.*—1, W. Lund. 2, J. W. Collinson, Halifax. *hc*, J. W. Collinson; H. Jennings; J. Guthrie.

TUMBLERS.—*Long-faced, Almonds.*—1, J. Dye. 2, J. G. Dunn, Newcastle. *hc*, J. G. Dunn; M. Green; J. Baxter, Newcastle. *Long-faced, Balds or Beards.*—1, R. Gray. 2, J. Chadwick. *hc*, W. J. Donkin; J. Thompson; W. Croft.

ANY OTHER VARIETY.—1, M. Ord. 2, H. Beldon. *hc*, R. Kitchen; J. Thompson; E. Horner.

SELLING CLASS.—*Cock or Hen.*—1 and 2, J. H. Harland, Norton. 3, A. A. Vander Meersch. *hc*, R. Laws; W. B. Van Haansbergen; H. Beldon; J. Grant, Edinburgh. *c*, J. Ashworth.

SELLING CLASS.—*Pair.*—1, A. Frame, Larkhall, N.B. 2, J. Bell, Newcastle. 3, W. E. Easton. *hc*, T. Duncan; J. Thompson; A. Wright; H. Beldon; E. Horner. *c*, W. Sefton.

CANARIES.

BELGIAN.—*Clear or Ticked Yellow.*—1, 2, and Medal, J. Rutter, Sunderland. *hc*, J. Brown, jun., Penrith. *Clear or Ticked Buff.*—1, R. Hunter. 2, W. Scott. *hc*, J. Rutter.

BELGIAN.—*Variegated.*—1, J. Rutter. 2, Dobson & Phillips. *hc*, J. N. Harrison, Belper. *Clear Dun or Dun Marked.*—1, W. Pearson, Seaton, Birmingham. 2, G. Scott.

NORWICH.—*Clear Yellow.*—1, Moore & Wynn, Northampton. 2, Miss E. Baxter. *hc*, J. Baxter; Grainger & Allenby, Durham. *Clear Buff.*—1, M. King, Scarborough. 2, J. Clemenison. *hc*, Moore & Wynn. *hc*, Miss E. Baxter; H. Headley, Leicester.

NORWICH.—*Clear Yellow, Marked or Variegated.*—1 and Medal, Miss E. Baxter. 2, S. Tomes, Northampton. *Clear Buff, Marked or Variegated.*—1, Miss J. Baxter. 2, W. Watson, jun.

CRESTED.—*Clear Yellow.*—1, J. Spence. 2, W. Watson, jun. *hc*, S. Tomes. *Buff or Buff-marked.*—1, Miss J. Baxter. 2, Briggs & Brown.

GLASGOW DONS.—*Clear Yellow.*—1 and 2, J. Kerr, Morpeth. *hc*, J. Stark, Bbside. *Clear Buff.*—1, J. Davison, Newcastle. 2, P. Trainer, Newcastle. *hc*, J. Kerr. *Variegated.*—1, J. Kerr. 2, J. Baxter.

LIZARDS.—*Golden-spangled.*—1 and Medal, J. Taylor, Marlborough. 2, R. Riechie, Darlington. *Silver-spangled.*—1, J. Taylor. 2, M. King.

GOLDFINCH MULES.—*Yellow.*—1, J. Baxter. 2, J. Laughland, Kilmarnock. *Buff.*—1, J. Baxter. 2, J. Brown, jun. *Dark.*—1, J. Baxter. 2, M. Barton.

LINNET MULE.—1, J. Stevens. 2, E. S. Godsell, Gloucester.

ANY VARIETY OF MULE.—1, J. Baxter.

CINNAMON.—*Jonque.*—1, Moore & Wynn. 2, G. Ather, Gateshead. *hc*, J. N. Harrison, Belper. *Buff.*—1, J. N. Harrison. 2, Moore & Wynn. *hc*, J. Gilheppie, Newcastle. *Marked or Variegated.*—1, W. Pearson. 2, Miss J. Baxter. *hc*, J. Stevens, Middleburgh.

CANARY.—*Green.*—1, J. Spence, South Shields. 2, J. Jackson. *hc*, J. Potter, Gateshead. *Common.*—1 and extra, Miss C. W. Blenkinsop, Newcastle. 2, Robson. *hc*, J. Spence; C. Robson, Cramlington. *Any other Variety.*—1, Miss M. B. Brown. 2, J. Spence.

GOLDFINCH.—1, J. King, Newcastle. 2, J. Baxter. *hc*, D. Kay.

LINNETS.—*Brown.*—1, W. Carrick, Middleborough. 2, A. Webster, jun., Kirkstall, Leeds. *hc*, J. Baxter (2).

BRITISH BIRD.—*Any other Variety.*—1, Miss E. Baxter. 2, Miss J. Baxter.

FOREIGN BIRD.—*Any Variety.*—1, J. Lamb, Newcastle. 2, S. G. Blenkinsop.

SELLING CLASS.—1, J. Baxter. 2, J. Robson. *hc*, Grainger & Allenby, *hc*, J. Kerr.

JUDGES.—*Poultry.* Mr. R. Teebay, Fulwood, Preston. *Pigeons.* Mr. T. J. Charlton, 62, Trafalgar Street, Bradford; Mr. F. Esquilant, 4, Effra Road, Brixton. *Canaries.* Mr. T. Lowrey, Low Fell, Gateshead; Mr. W. Robinson, Seghill, Northumberland.

RABBITS AT THE YORK SHOW.—The schedule of prizes ought to secure entries equal to those of the previous exhibitions. There

are five classes for Lops and five for the other varieties. A piece of plate is given for the best Lop, also another piece of plate for the best Rabbit in any of the other classes. A Selling class, also, is added.

SCOTCH HOUSE TUMBLERS AS EXHIBITION BIRDS.

In my former papers I have endeavoured to describe the House Tumbler as it is, and has been; my object in continuing the subject is to show what I think may be made of it in the way of reviving the taste for performing birds, and from nothing in connection with it do I expect better results than from its suitability as a bird for exhibition at our shows. Before, however, attempting to describe the qualities which make the House Tumbler a bird particularly adapted for exhibition, and the good effect which I would expect to follow from giving it the encouragement to which it is justly entitled, it will be necessary to consider what influence the annual exhibitions of Pigeons, &c., which are now held in almost every town, have already had on the tumbling "fancy" and on the performing bird itself. My own belief, after carefully considering the subject, is, that in both cases the effect has been exceedingly bad, so much so that I do not think that any other cause, or all other causes put together, have damaged the tumbling fancy half so much, or so greatly tended to deteriorate the bird as a performer.

In the prize lists of many shows, particularly in England, there is no encouragement offered to performing birds; the classes for Tumblers being merely divided by colour or markings, the awards are monopolised by Short-faced birds, which do not tumble as a rule, and are not expected to do so. The consequence of this treatment is, that the performing bird is kept out of the notice of those who are first induced to keep Pigeons through the interest they find in these exhibitions, and I have little doubt that by far the greater number of those engaged in the pursuit at the present time have been drawn into it as an agreeable recreation, in the way I have indicated. Besides this, the gaining of even a small prize will sometimes give the lukewarm fancier a new and fresher interest in his birds, and it must be confessed that very few care to admit that they keep birds incapable of taking prizes, or of such small consequence that there is no class generally allotted for them. I have, consequently, little doubt that many who have kept performing birds have gradually given them up because they have found that they were generally not considered very high-class. Shows conducted on this principle, therefore, appear to me to have the double effect of tending to cause old fanciers to give up the performing Tumbler, and of keeping new fanciers from cultivating a breed which probably more than any other is suited for the beginner on account of its easy management, and the great scope which it affords for the study of colour-breeding through the wide range of colours and marking which it presents for experiment. In Scotland nothing pays a show better than a class for common Tumblers, and committees, who are generally alive to their interests, give the performing bird this amount of encouragement, I am sorry to believe with the very worst effect on the breed itself. The reason is obvious, for whereas a Tumbler before shows were introduced was valued in proportion to its quality as a performing bird, now it is valued because it can take prizes, which it is none the less likely to do although it cannot tumble, as I am not aware that anyone has ever pretended to know from mere appearance whether a bird can tumble or not. I am perfectly aware that good performing birds still secure a share of the prizes; but there are three great causes at work gradually making the share a smaller one, and which, I think, will ultimately extinguish it altogether, unless some encouragement be given to birds capable of being tested as performers by the judges at our shows.

The first cause, having its origin in our exhibitions, tending to deteriorate the bird as a performer, is that the common Tumbler has been a good deal crossed with the Short-faced bird for the purpose of making it handsomer. This arises from the fact that there is no difference in the standard for shape and style in the performing bird from the Short-faced, and that it is impossible to tell where the two breeds meet; it is, therefore, no great wonder that many judges err in admitting too much of the Short-faced; and to give some idea of what will sometimes occur, I may state that I have seen very fair pure Short-faced Bards carry off the first prize in a class for common Tumblers, and have often observed the first cross between the common Tumbler and the high-class Short-face amongst the prizetakers, a kind of bird which I never could see had anything but colour to recommend it. The more common and successful plan, however, is to have the cross considerably more toned down, or if a first cross to make it with a low-class Short-face, such as a Bald or Beard, in which case it is much more difficult to detect.

Some judges, however, have such a good eye for the true-bred performer, that exhibitors of crosses find that with every care they are found out; and to meet the taste of these resort is had to another plan equally destructive to the bird as a performer,

and which is the second great injurious cause having its beginning in our shows. The mode pursued is to breed the common Air Tumbler true enough, but to use the same means as the Short-faced breeder employs to get them small and fine—viz., constant confinement coupled with very close breeding. I need scarcely say that this treatment has most probably destroyed the tumbling property in the Short-faced breed, and may be expected to be equally successful with the common Tumbler. The House Tumbler will, no doubt, throw birds which will tumble inside, although never allowed their liberty, but even in their case I have in a former letter shown that the greatest amount of success is to be found in flying them; how much more must it be necessary in the case of only moderately-performing Air-Tumblers? I should be inclined to think if such birds had no House-Tumbler blood in them, a very few generations of them treated in this way would extinguish the faculty altogether.

The third cause, impairing the quality of the performing bird and emanating from the shows, is that by far too many prizes are given to Balds, Beards, and Mottles. I confess that while I admire the beauty of these birds I am no lover of them, for this reason—that from what I have seen they seem to me to offer only one alternative to the exhibitor of them, and it is this—that he must either be to some small extent a rogue or a fool. If exhibitors were all honest it need not be so; but as matters stand he must either demean himself to trim his birds by extracting the feathers necessary to improve the cut in the Bald or Beard, and to get the exact marking wanted in Mottles, which can be done without the possibility of detection, or throw away his entry money, and see others less scrupulous than himself, perhaps with inferior birds, secure the honours. It is not, however, on this ground that I think the giving of so many prizes to the kinds referred to injures the Tumbler as a performing bird, but because they are so uniform in marking that it is impossible to note the best performers while flying, and match them for tumbling accordingly. Although I am not an exhibitor I am a visitor at a good many exhibitions, and when I meet a prizetaker in common Tumblers, among the first questions I generally ask is, Do your birds tumble? In nine cases out of ten the answer I get is to the following effect:—"I have a great many birds of the same colour, some tumble and some not, but I don't know which, and cannot say whether these do or not." These markings are also so difficult to breed anything like correctly, that everything requires to be sacrificed in matching for marking alone, even when it is possible to ascertain the tumbling qualities of the individual birds. No better evidence of the difficulty of breeding them for any other property combined with marking can be adduced than the relative qualities of these birds in the Short-faced classes with Almonds as Short-faces at the present time. Why are the Almonds so much ahead of them in head and beak, but because it is so much easier to make use of any colour or marking springing from Almonds, than to match a badly-marked Bald or Beard?

I have endeavoured to show that by the present system of awarding prizes in common Tumbler classes the awards do not generally go to the best performers, but often to birds which are not performers at all; and as the progeny of prize birds are always sought after, this has produced, and is still producing, an extensive dissemination of a very inferior class of performers. I think this evil might be very considerably counteracted by giving some encouragement to the House Tumbler, which is suited for an exhibition bird, because it is in many cases as neat and well-made as the Balds and Beards which carry off the bulk of the prizes, and is to be found of excellent colour in all the following kinds—viz., Almonds, Kites, Agates, &c., Blacks, Reds, Yellows, Blues, and Duns, and probably others which I may not have seen. In addition, the tumbling property has been so developed that it can be tested by the judges themselves, and I do not see why this should not be considered an additional point.

I have had my attention called to the prize schedule of the Kilmarnock Show, where I find a special prize is offered for the best performing bird in the common Tumbler class; this is a step in the right direction, but not exactly what I think they are entitled to, but my views on this must be left to a future communication. In the meantime I notice with pleasure that we are again to have a show in Glasgow. Surely the Committee will see that something is done for this class there, more especially as I believe that Glasgow claims the credit of being the cradle of the House Tumbler.—SCOTCH THISTLE.

BOTTLE-FEEDING.

I AM still often appealed to, notwithstanding what I and others have written on the subject, to account for failure in the application of the bottle system of feeding bees. In the majority of such cases I am able to judge only from written or verbal descriptions of the manner in which the unsuccessful ones have gone to work, by which descriptions it would generally appear as if the plan had been carried out properly. But I am con-

vinced that there must have been some screw loose somewhere, as I am quite sure, if the directions so frequently given in your columns are scrupulously followed, that failure cannot possibly result. I have during the past week or two given considerable quantities of food to five hives. Contrary to my usual custom, owing to the dull wet weather we have had, and wishing to have the feeding accomplished as quickly as possible, I have fed both day and night. In every case the bottles have been emptied in the course of a few hours with little excitement, and also, I am quite sure, without a single drop having fallen or dripped within the hives after the bottles have been placed in position. My bottles for autumnal feeding hold about 2 lbs. each. I have tried all sorts of feeders—fountain, float, and trough, but have never met with anything to equal the bottle for cleanliness, rapidity, or safety; in freedom from excitement, or the attraction of robbers.

Bee-keepers who have not yet examined their stocks should do so without delay, and supply any deficiency during the present month before colder weather sets in. Let all the food that may be required to render the hives safe for the winter be supplied in as short a time as possible, that all unnecessarily prolonged excitement may be avoided. As soon as it has been concluded let all the appliances be removed, and the hives made secure for the winter.—S. BEVAN FOX.

THE BEE SEASON OF 1872 IN SCOTLAND.

THE bee season in Scotland has been, on the whole, one of the worst experienced for many years back. In the first place, the mortality of hives in early spring was unprecedentedly great. An adverse winter was succeeded by a kind of weather most prejudicial to breeding. Autumn stores, not over-abundant, diminished with more than ordinary rapidity, so that what with impoverished supplies, mortality of bees, and deaths of queens, whole apiaries in various parts of Scotland were sadly broken up. Such, at least, has been the result of my own experience and observation in not a few localities. Spring, again, was followed by an indifferent summer, and a still worse autumn. Throughout the season the weather maintained the same unvarying character—rain! rain! rain! almost incessantly. Flower-honey was in consequence very limited in most localities, and heather-honey even more so. But it could not be otherwise. How could the bee-keeper expect a good return from the heather, rich though it was, when the corn, and the wheat, and the potatoes were rotting in the fields from constant deluges of rain? Notwithstanding that the heath was of extraordinary richness and exuberance of flower, the quantity stored, more particularly in the later districts, was comparatively small, and very few hives indeed were much benefited from this the richest of all nectar-producing flowers.

Notwithstanding the character of the season, swarms though later were numerous enough, and most bee-keepers find at the close that their apiaries are more marked for deficiency in the weight than in the numbers of the hives. I see some good accounts of several bee-keepers in England, and I have often envied the splendidly-filled supers of 50 lbs. and upwards we sometimes read of being obtained in the apiaries of Mr. S. B. Fox, of Exeter, and others. No doubt our southern friends owe it mainly to their milder climate. We have in Scotland no lack of honey-producing flowers, but then our climate is colder, more ungenial, and not so propitious for bees as in the southern parts of England.

I would here remark that it is a very customary thing for novices in bee-keeping to pride themselves on the amount of honey obtained by virtue of some particular hive constructed upon this or that principle—the "old-fashioned" being always designated the failing system, and the "modern" or "scientific" the successful one. An experienced bee-keeper will never take credit for such adventitious results. Only grant the two necessary conditions—good weather and good pasturage, and strong hives whether domiciled in a palatial hive of the most costly material and elaborate construction, or in the simple common straw, if both of proper dimensions will show results, *cæteris paribus*, equally good.

Bees, no doubt, require to be managed intelligently, and regard had to their known instincts and habits; but it is an old error to suppose that we can compel our little favourites to augment their sweets according to mere whim or caprice. All the bee-science of the age is inadequate for such a purpose, nor can it ever induce the strongest hive in such an autumn as the past to collect, even from the exuberant flowers of the well-loved heather, any large supplies; and rich and beautiful though that favourite flower was this season, it may be said, so far as the bees were concerned, to have "wasted its sweetness in the desert air."

Most bee-keepers who keep large apiaries have had this autumn to feed largely such hives as were deficient in weight. But what is the quantity of honey requisite for winter stores? I always wish as a minimum 15 lbs. It is true that the ordinary consumption for a hive from October to March may not exceed

8 lbs.; but while this is so, we know from experience that a hive with only such limited supplies may, in certain states of the weather, die of starvation. If the honey is stored in detached quantities in several parts of the hive, then the bees, clustering in certain states of winter cold, may be unable, after the surrounding stores are exhausted, to reach other parts where honey is, and the bees perish. This I have often witnessed. It is therefore desirable to have ample stores, and so situated that such contingencies may not occur. Besides, in a late spring, extending on to May, the consumption of honey is larger, and, if the hive is scantily supplied, feeding must be resorted to. Winter feeding should be carefully avoided, except in extreme cases, and having fed our stocks up to the proper weight in September or October, we should leave them unmolested and undisturbed, till the returning warmth of genial spring again rouses our little favourites from their winter repose.—J. LOWE.

NATIONAL PERISTERONIC SOCIETY'S SHOW.—Visitors to the Crystal Palace Show can be admitted to this Society's Show on the presentation of their address cards. The next meeting will be held on the 19th inst., from 8 to 11 P.M., at Evans's Covent Garden Hotel, when some two or three hundred Pigeons will be exhibited from the lofts of Messrs. Jayne, Merck, Betty, Ord, Hedley, and others.

OUR LETTER BOX.

BRAHMAS IN A SMALL ENCLOSURE (Novice).—As much of the run as you can must be laid down in grass. As a novice we do not advise you to begin with a cross. In such a space as you mention you should keep Brahmas. They are good layers and sitters, and good mothers. As you have no fowls at present, we advise you to begin with, say, one cock and eight or nine pullets. You can keep more by-and-by, but they will be enough to begin with. Any of the poultry books will give you instructions about a house, but they are really not necessary. The fowls require a house to shelter them from the rain, wind, and draught. It should have good-sized round perches within 2 feet of the ground. The floor should be of hard earth, beaten hard enough to cause water to run off. It should, if possible, face south, west, or south-west. The door should be at one end, not in the middle of the house; it should open on their run. The house should be light enough to enable the man to clean out every hole and corner, and the master to see that it is so. A novice need not of necessity be ignorant. He has an open book always before him. He can see birds and fowls at liberty. Let him watch them, and make his own place as much as possible like nature. More than half the model houses and modern appliances rather retard than advance success. There is nothing in the management of poultry that may not be mastered by a little observation and a disposition to learn from the birds themselves.

PRECOCIOUS PULLET (A. W.).—“A pullet, cross-bred between Brahmas and Dorking hatched the last day of February, 1872, is stated to have laid thirteen eggs in a stolen nest, and brought out ten chicks on the 1st of the present month alive and doing well. Can this be?” We quite believe it. We have had the same thing with a Dorking. We hatched her the first week in January to show for a competition in July. She had a brood of chickens at the time.

LIGHT BRAHMAS FOR EXHIBITION (B. W. A.).—Unless yours are suburban fowls they should not want much washing. If they have dirty patches on their plumage, wash them off with a piece of flannel dipped in warm water and a little soap. The feet and beak may be washed with plain water. All the plumage may be washed in this way. The birds should then be put in a basket partly full of soft straw, and kept before the fire till quite dry. They should then be put on straw till they go to the show. They should not be washed unless it is necessary, as it is not good for the plumage.

VARIOUS (N.).—Some people prefer the Brahmas' spangled breast of which you speak. It is quite as correct as the black one, and such cocks throw the best pencilled chickens. But mind, it must be spangled, not splashed. Any interference with the process of moulting is injurious to the bird and its plumage. We strongly advise you to give no medicine of any kind, but merely to feed generously with cooling food. It is unusual for a pullet to moult heavily; but at ten months old she is nearly a hen thoroughly furnished.

DORKING COCKEREL'S BREAST AND TAIL (H. S. F.).—There is no reason why such a Dorking cock as you describe, with many white feathers in his breast and tail, should not take even a first prize at the largest show. Dorkings are birds of weight and symmetry as table birds, not of feather. There is no occasion to disqualify Black Dorkings because such a thing was never seen. In order to meet the fancies of breeders, classes are provided for White and Silver-Greys. Such being the case, no judge would be justified in passing a bird on account of colour.

PLUMAGE OF A CUCKOO DORKING (Cesar).—The ground colour of a Cuckoo Dorking is a French grey, or a washed-out blue. Oats, meat, and turnip will cause looseness, while the opposite effect will be brought by beans and peas, also by a liberal mixture of chalk in their food.

OXFORD POULTRY SHOW (H. S. Fraser).—It is apparent from the certificate of entry you enclose, that the Secretary made a decided mistake. As to the blots, &c., in a different coloured ink we will not pass a judgment. We think he ought to return the entrance money and the carriage expenses. (C. Dennison, Halifax).—This gentleman writes to say that his birds were not at the Show.

VARIOUS (C. J.).—All that we know about goat-keeping is briefly stated in our No. 437. Goats need shade from summer heats. If a cow will eat Jerusalem artichokes, tubers and their leaves, they would not do her any injury. They might be taken up as required. We should boil them and mix them with cut chaff. Cider two years old may be bottled without any addition.

HEXAGONAL NETTING (H. F. F.).—We think the meshes will be small enough to prevent the escape of the birds you name.

SAVING BEES OF AN UPSET HIVE (J. H. Howard).—If, as we imagine from your description of the combs after the accident and your subsequent manipulations, your bees are now without any combs, save such small pieces

as you have placed in the drawer, we do not think there is any probability of your saving them alive in the way you propose. If you could obtain a few empty combs and attach them in a hive, then feed copiously with sugar syrup and the remains of the honey you have saved, you might have good hopes of success; but you must be prepared to find the cost somewhat considerable, as, doubtless, a large portion of the supply given would be used for the construction of new comb. In any case feed on the top by the bottle, as so often described. The bees will not live in one compartment and go into another just when they require food. As a matter of economy, you had better unite the bees to some other colony.

BAR HIVES (M. Z.).—Bar hives are made of various sizes to suit locality, size of swarms, &c.; and by sending five stamps to our office you will get by return of post “Bee-keeping for the Many,” which will give you full and complete instructions as to the best of all bar hives, and how to make them.

METEOROLOGICAL OBSERVATIONS, CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	A.M.				IN THE DAY.					Rain.
1872. Nov.	Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Temperature.		Radiation Temperature.		
		Dry.	Wet.			Max.	Min.	In sun.	On grass	
We. 6	Inches.	deg.	deg.	W.	deg.	deg.	deg.	deg.	In.	
Th. 7	29.918	56.4	55.5	W.	50.2	61.2	49.4	65.5	46.8	
Fri. 8	30.263	48.4	46.3	W.	50.3	57.8	44.4	50.0	40.1	
Sat. 9	30.253	50.5	49.5	N.W.	48.6	55.0	41.8	59.1	37.9	
Sun. 10	30.167	45.1	43.9	N.W.	49.1	51.9	41.6	66.2	37.3	
Sun. 10	29.638	40.7	38.7	N.	47.8	45.2	37.8	82.3	36.3	
Mo. 11	29.892	36.3	34.6	N.	45.3	44.3	34.2	76.0	34.5	
Tu. 12	29.980	38.6	38.2	N.E.	44.0	47.3	36.0	55.2	31.8	
Means	30.029	45.2	43.8		47.9	52.2	42.7	73.9	37.4	

REMARKS.

- 6th.—Rather dull day, but without rain; gale in the evening.
7th.—Very bright and fine all day, getting colder towards night.
8th.—Dull in early morning, but very fine all day, though rather overcast after 2 P.M.; more damp towards night, but no rain.
9th.—Hazy early, but fine and bright afterwards, and so continued all day; rather cooler than the previous day.
10th.—Rain in the night and early morning, then very fine till 4 P.M.; rain at 6 P.M., and snow at 9 P.M.; fine but cold night.
11th.—Fine but very cold in morning, a little snow at 9 A.M.; a very fine though cold day.
12th.—Rain and dark early, but soon cleared off, and was very fine in the early part of the day; dark and sharp shower about 2.30 P.M.; cold and windy after.

With a greater prevalence of northerly winds, we have had less rain and lower temperature, except of course in the sun, which, having had a chance of penetrating the atmosphere, has sent the radiation thermometer beyond 80° on several days.—G. J. SYMONS.

COVENT GARDEN MARKET.—NOVEMBER 13.

We have very little alteration to report, the northern markets as well as this being unusually quiet, and no orders to any extent are on hand, but we look for improvement as we approach the more busy time of Christmas. Outdoor produce is generally sufficient for the trade, Broccoliis being unusually good and plentiful.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	½	sieve	8	0 to 5	Mulberries.....	£	lb.	0	0 to 0
Apricots.....	doz.	0	0	0	Nectarines.....	doz.	0	0	0
Cherries.....	Per lb.	0	0	0	Oranges.....	£	100	6	0 to 12
Chestnuts.....	bushel	12	0	20	Peaches.....	doz.	0	0	0
Currants.....	½ sieve	0	0	0	Pears, kitchen.....	doz.	1	0	8
Black.....	doz.	0	0	0	dessert.....	doz.	2	0	4
Figs.....	doz.	0	0	0	Pine Apples.....	lb.	4	0	8
Filberts.....	lb.	1	0	1	Plums.....	½ sieve	6	0	3
Golberries.....	lb.	1	0	2	Quinces.....	doz.	1	0	2
Gooseberries.....	quart	0	0	0	Raspberries.....	lb.	0	0	0
Grapes, hothouse.....	lb.	2	0	5	Strawberries.....	£	lb.	0	0
Lemons.....	£	100	6	0	Walnuts.....	bushel	15	0	30
Melons.....	each	2	0	5	ditto.....	£	100	3	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	doz.	2	0 to 4	0	Mushrooms.....	pottle	1	0 to 8	0
Asparagus.....	£	100	0	0	Mustard & Cress, punnet	0	2	0	0
Beans, Kidney.....	£	100	1	0	Onions.....	£	bushel	2	0
Broad.....	bushel	0	0	0	pickling.....	quart	0	6	0
Beet, Red.....	doz.	1	0	3	Parsley per doz. bunches	2	0	3	0
Broccoli.....	bundle	0	9	1	Parsnips.....	doz.	0	9	1
Cabbage.....	doz.	1	0	1	Peas.....	quart	0	0	0
Capiscums.....	£	100	2	0	Potatoes.....	bushel	3	6	6
Carrots.....	bunch	0	6	0	Kidney.....	do.	0	0	0
Califlower.....	doz.	2	6	4	Round.....	lb.	0	3	0
Celery.....	bundle	1	6	2	Radishes.....	doz. bunches	1	0	1
Coleworts.....	doz. bunches	2	0	8	Rhubarb.....	bundle	0	0	0
Cucumbers.....	each	0	8	1	Salsafy.....	£	bundle	0	9
pickling.....	doz.	0	0	0	Savoy.....	doz.	1	0	2
Endive.....	doz.	2	0	0	Scorzenera.....	£	bundle	0	9
Fennel.....	bunch	0	3	0	Sea-kale.....	basket	2	0	3
Garlic.....	doz.	2	6	4	Shallots.....	lb.	0	3	0
Herbs.....	bunch	0	8	0	Spinach.....	bushel	2	0	3
Horseradish.....	bundle	3	0	4	Tomatoes.....	doz.	1	0	2
Leeks.....	bunch	0	2	0	Turnips.....	bunch	0	3	0
Lettuce.....	doz.	0	9	1	Vegetable Marrows.....	doz.	0	0	0

POULTRY MARKET.—NOVEMBER 13.

If the present dry and brisk weather last, we may look for an improvement in trade and prices. Pheasants are coming in more plentifully, and Grouse in smaller numbers. The prices of both are influenced by it.

WEEKLY CALENDAR.

Day of Month.	Day of Week.	NOVEMBER 21—27, 1872.	Average Temperature near London.			Rain in 43 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
21	TH		49.6	36.2	42.9	26	31 af 7	1 af 4	20 9	57 0	20	13 51	326
22	F	ST. CECILIA.	49.2	34.7	41.9	22	32 7	0 4	30 10	21 1	21	13 35	327
23	S		47.6	34.2	40.9	18	34 7	59 3	40 11	38 1	C	13 18	328
24	SUN	26 SUNDAY AFTER TRINITY.	47.4	31.7	39.5	14	35 7	58 3	morn.	54 1	23	13 0	329
25	M	Michaelmas Law Term ends.	46.4	33.7	40.0	22	37 7	57 3	50 0	8 2	24	12 41	330
26	TU		47.2	32.9	40.0	23	39 7	56 3	2 2	20 2	25	12 22	331
27	W	PRINCESS MARY OF TECK BORN, 1839.	47.0	33.6	40.3	20	40 7	55 3	15 3	35 2	26	12 2	332

From observations taken near London during forty-three years, the average day temperature of the week is 47.8°; and its night temperature 38.6°. The greatest heat was 62°, on the 25th, 1863; and the lowest cold 9°, on the 25th, 1858. The greatest fall of rain was 0.95 inch.

THE CULTURE OF WINTER CUCUMBERS.

FROM now until the month of March where a large supply of Cucumbers is required, How to obtain them? is a most important question. Of course where proper appliances are provided there is little difficulty; but many gentlemen expect to have Cucumbers whenever they require them, and are not willing to go to the expense of proper houses.

I have seen Cucumbers grown in almost every form of house, and have arrived at the conclusion that the best is the half-span. A new range of houses has been built here on the half-span principle for growing Cucumbers in winter and for early Melons, and nothing can answer better than they do. These houses are 11 feet wide, 10 feet 6 inches high from the ground line to the apex of the roof, and the beds, which extend along the front of the houses, are 5 feet wide. The path is under the ridge; and a stage, 2 feet wide, runs along the back of the house. They are thoroughly heated by four rows of 4-inch pipes, so that a temperature of 65° can be maintained during the most severe weather in winter. One of the first, if not the first house of this description was built by Mr. James Gray, of Danvers Street, Chelsea, in his own yard, and there, close to the heart of London, he managed to cultivate Cucumbers most successfully. They were planted out in the bed, and the vines trained to a wire trellis fixed to the roof. The trellis I had constructed here is moveable, and is fixed as close to the roof as possible during winter, and removed further from the glass in summer.

Although it is highly important to have a well-constructed, efficiently-heated, and well-ventilated house, skilful management is also very necessary. I will describe the method of culture we pursue here. The beds are furnished with two rows of 3-inch pipes, over these is laid a good depth of brickbats, over these again is placed a layer of turf, grass side downwards. I do not fill up all the bed at once, but divide it longitudinally with a wall of turf, and I fill the front half with the compost in which the Cucumbers are planted. The compost consists of good turfy loam four parts, well-decayed manure one part, and is trodden-in rather firmly with the feet. I like the plants to be of a good size before planting-out.

One mistake which is frequently made with Cucumbers—those grown for the winter supply especially—is over-cropping them; it is quite impossible to keep up a supply if this be done. The plants that will bear fruit from Christmas onwards ought not to bear much previous to that date. I like to have plenty of short-jointed healthy young shoots to start with, and as the days lengthen a night temperature of from 65° to 70° may be maintained.

The Cucumber suffers much from insect pests, thrips and red spider being especially annoying. The thrips are best destroyed with tobacco smoke, and the red spider will succumb to repeated and effectual syringing. If the

plants are clean it is not advisable to syringe them daily in winter; indeed it is better not to syringe any more in winter than is required to destroy red spider.

The best variety to grow, to keep up a constant supply of useful fruit during the winter, is Telegraph; the fruit is not large, but can be obtained in quantity. I do not grow it, as I am not required to keep up a large and continuous supply; my endeavour is to obtain handsome specimens, and for this purpose I grow two sorts—viz., Tender and True, an exceedingly handsome sort I raised some two years ago. It was exhibited before the Fruit Committee of the Royal Horticultural Society, and received a first-class certificate. I have exhibited it many times since, and it has always gained the highest award. Blue Gown is the other sort grown here; it is also an excellent exhibition kind, and when true is black-spined, and has a thick bluish bloom. It is very difficult to save the seed true from any of these good sorts, as I find they do not take freely with their own pollen.

I have already advised to fill up at first only half the bed on planting-out; when the plants show signs of requiring a run of fresh compost the other half should be filled up with that already recommended. The plants ought also to be looked over once a-week, the young growing shoots stopped when necessary, and tied to the trelliswork. All decaying leaves ought to be removed as soon as perceived, and do not allow the plants to be overcrowded at any time with shoots. In cold unfavourable weather the ventilation ought to be carefully attended to, as chilly draughts will much injure the plants.—J. DOUGLAS.

ELECTION OF STRAWBERRIES.

I SEND you a return of Strawberries made by eight different growers to me, and, including my own, the return will be from nine persons. As the same numbers have not been mentioned by all, it is difficult to make a very exact conclusion as to the merits. The following is an approximation:—

1. *Sir J. Paxton* (Bradley).—Named by eight; placed among the first three by three, with sixteen votes in its favour. Medium season, fine quality, good bearer.

2. *President*.—Named by eight; placed among the first three by two, with fourteen votes recorded. Medium season, good quality, free bearer.

3. *British Queen* (Myatt).—Named by seven, with seven votes. Medium season, fine flavour. Requires strong soil.

4. *Dr. Hogg* (Bradley).—Named by six, with ten votes; placed among the first three by two persons. Medium season, fine flavour, large fruit. Requires strong soil.

5. *Cockscomb* (Royal Gardens).—Named by six, with ten votes. Medium season, very large fruit.

6. *Eleonor* (Myatt).—Named by five, with eight votes. Large fruit, late season, good cropper, inferior flavour; placed in the first three by one person.

7. *Lucas* (De Jonghe).—Named by four, with six votes; placed among the first three by one person. Mid-season, fine flavour, good cropper. Requires good soil.

8. *La Constante* (De Jonghe).—Named by four, with seven votes. Mid-season, small fruit, good bearer.

9. *Elton Pine*.—Named by four, with five votes. Late season, medium bearer, sharp acid flavour.

10. *Frogmore Late Pine*.—Named by four, with four votes. Late season, good bearer, medium flavour. Requires strong soil.

11. *Filbert Pine*.—Named by three, with four votes. Mid-season, fine flavour, good bearer. Requires good soil.

12. *Early Prolific* (Roden).—Named by three, with five votes. Early season, fine quality, good cropper.

13. *Vicomtesse Héricart de Thury*.—Named by three, with five votes. Medium early, good bearer, medium quality.

14. *Prince of Wales* (Ingram).—Named by three, with four votes. Spoken of very highly by Mr. Marsden for light soils.

15. *Black Prince*.—Named by three, with four votes. Early, small, poor quality.

16. *Sir C. Napier*.—Named by three, with four votes. Mid-season, medium quality, good bearer.

17. *Mr. Radcliffe*.—Named by three, with three votes. Mid-season, good quality, fair cropper. Requires strong soil.

18. *Keens' Seedling*.—Named by three, with three votes. Early, medium-sized, poor quality.

The following have been named by two persons:—*Empress Eugénie*, alias *Black Bess*, *Eclipse*, *Wonderful*, *Crimson Queen*, *Rivers's Eliza*, *Bicton White Pine*; the following once:—*Scarlet Pine*, *Sir Harry*, *Guinevere*, *James Veitch*, *Her Majesty*, *Souvenir de Kieff*, *Belle de Paris*, *Aromatic*, *Rifleman*, *Jucunda*, *Marguerite*, *Premier*, *Garibaldi*, *Duke of Edinburgh*, *Admiral Dundas*, *Amateur*, *Bonne Bouche*, and *Waite's Seedling*. Of these *Amateur*, *James Veitch*, and *Aromatic* are as yet little known, and likely to prove very serviceable; and *Scarlet Pine*, *Crimson Queen*, and *Bonne Bouche* are fine-flavoured sorts worth growing, especially in large gardens. We may consequently select the following:—

Early.—*Early Prolific* (Roden), and *Vicomtesse Héricart de Thury*.

Medium.—*Sir J. Paxton*, *President*, *British Queen*, *Dr. Hogg*, *La Constante*, *Cockscorn*, *Lucas*, and *Filbert Pine*.

Late.—*Elton*, *Frogmore Late Pine*, and *Eleanor*.

Among the letters sent to me I select three which enter very fully on the merits of some of the sorts, and which will be of great interest to many of your readers.—C. P. PEACH.

RASPBERRY CULTURE.

The Raspberry is one of the most useful of the small fruits, and is, withal, of easy culture. The demand for the fruit is always great both in private establishments and public markets; and not only does an increasing population require an increase of fruit of all kinds, but owing to the prosperity of trade and high wages, the fruit is more freely used in nearly every household than formerly. As a marketable article, therefore, there is no fear of growing too many Raspberries, and general current prices will be easily maintained, and the proper cultivation of the Raspberry in suitable situations cannot fail to be profitable.

The Raspberry is a surface-rooting plant, spreading a dense network of fibres almost on the top of the ground, and as a consequence it is susceptible of injury by drought in early summer, predisposing to small shrivelled produce instead of perfecting fine, fleshy fruit. It will, however, also root deeply if encouraged to do so, and it is strongly advised that this encouragement be given to insure at least a portion of the roots being beyond the reach of the direct effect of the sun's rays. Trenching 2 feet deep and introducing vegetable refuse—leaves, weeds, &c., then digging into the surface a dressing of well-rotted manure, will be a good beginning to make in the way of culture. Any good ordinary soil of a loamy nature will grow Raspberries. The best is that somewhat retentive of moisture; and the worst hot, shallow, sandy soil, in which it is almost impossible to make them flourish ordinarily well.

The best time to make fresh plantations is the present, just as, or immediately before, the leaves fall, and the best canes to plant are those from a healthy stock of medium size, and which can be easily pulled up. If they require digging-up they generally have not that sufficiency of bristling surface roots necessary to their speedy re-establishment: therefore, those which can be easily pulled up are invariably the best. After planting, a good surface-dressing of manure should be given to exclude frost and afford a gentle stimulant by its virtues being carried down by rains. It is very essential that the

fibres round the collar of the plant be kept fresh. If dried and shrivelled by needless exposure, or a want of care in packing, at the outset a check is given which should be specially guarded against. This drying of the roots is a primary cause of failure in many things, and especially Raspberries and Asparagus.

The mode of planting depends on the form of training, and this in a great measure must be regulated according to circumstances. Where stakes are abundant they will probably be utilised, and assuming this, the canes should be planted in clumps of three, 4 feet apart, and 5 to 6 feet from row to row. I have always found it best in the long run to sacrifice the little fruit that might be produced the first year by cutting down the canes to within a foot of the ground. This insures a plentiful supply of young growth, which will bear in the following year, and the plantation is well established. If a little fruit is required the first year, one of the canes may be left at 3 or 4 feet long, and the others shortened. Better, however, than stakes is the hedge-system of training, and when 100 yards of galvanised wire can be bought for half-a-crown the cost is not ruinous. Three rows of wire, or even two rows stretched horizontally and supported by stakes, will be all that is really necessary; but a proper trellis with iron standards is certainly preferable on account of its durability, and a well-established and properly managed plantation of Raspberries will almost last as long as the trellis. The rows should not be less than 6 feet apart. Plant the canes a foot from each other, and if, when established, every alternate cane be left its full (ripened) length of 4 to 5 feet, and the rest shortened to 2 to 3 feet, a fine hedge of fruit will be the result.

Shortening at different lengths is always advisable as equalising the fruit. I have often found in hot seasons the best fruit on the shortest canes by the foliage above intercepting the burning rays of the sun; and this year I found the highest blossom most injured by the spring frosts. If in the spring any newly-planted canes refuse to grow they may be replaced by growing suckers; these, if taken up when 6 inches high, will be found bristling with young rootlets, and if planted on a rainy day will grow admirably—almost as well as if they had not been removed.

I have seen so much evil result from deeply digging-in manure and digging-up the roots, that I do not hesitate to brand the practice as pernicious and unnatural. The roots will come up to the surface fast enough without being helped up with the spade or fork. I have seen dried roots raked off the surface in spring by barrowloads, but never without a feeling of grief at the thoughtless and merciless mutilation. A very striking instance of the fallacy of deep digging amongst Raspberries came under my notice a few years ago. Quantities of manure were every year dug into the plantation in the vain hope of making it profitable. In the spring the dead upturned fibre raked up was a direct consequence, and the crop invariably a miserable one. At length a new bed was decided on, the old one being adjudged worn-out, and it might just take its chance until the new one came into bearing. "When left to 'take their chance,'" the old canes commenced bearing fruit, and although under condemnation, continued to bear profitably for many years. Infinitely better than digging-in a quantity of manure in the winter is stirring-up the soddened ground with a steel fork, and then covering the surface with 2 or 3 inches of good manure. If the appearance is objected to, a barrowload of soil will go a long way in putting the manure out of sight. This practice will protect the surface roots from frost in winter and drought in summer, and will, I have no doubt, keep a plantation in bearing for half a century, and perhaps double that time, due care in other respects being also given. My poor old grandmother gathered fruit from a bed of Raspberries for seventy years: she found them there and left them there—tolerable proof of their longevity.

We may learn one useful lesson from this fruit in its native state. Its home is in woods where it takes care of itself, and bears freely. This tells us that many vacant places beneath the shade of trees may be turned to account. Nothing will grow under trees so well as Raspberries. One of the most profitable plots of ground that I am acquainted with is an orchard of Apples and Pears, with an undergrowth of Raspberries. The hoe is the only cultivator used. In the winter the dead canes are broken to the ground, and in spring the surplus young shoots are chopped out, leaving the fruiters from 2 to 3 feet apart all over the ground irregularly. No stakes or other supports are used, and the only manure is falling leaves from above and decayed vegetation. They have

been planted thirty years, and every year bear a great quantity of useful fruit.

As to sorts, I cannot speak of McLaren's Prolific; but of those I have grown, Carter's Prolific, Northumberland Fill-basket, and the true Fastolf are unquestionably good, and may be depended on.—J. W., *Lincoln*.

THE GLADIOLUS DISEASE.

THE pleasure derived from the culture of this lovely autumn flower is to a great extent diminished by the uncertainty that rests on the harvesting of the bulbs, owing to a malady for which, as far as I can see, there is neither prevention nor cure, but which more or less has troubled, as far as I am aware, every, or nearly every, grower who has ventured on their cultivation. It is more virulent in some seasons than in others, and soil and situation may perhaps mitigate its ravages; but like the great produce of my native county, hops, it is so uncertain that no one can predicate of the safety of his stock until the bulbs are securely housed. Some years ago the eminent London firm of Messrs. E. G. Henderson & Son obtained a very large and valuable collection from France, being determined to cultivate them very extensively; the bulbs were planted with considerable care, but nearly the whole of the collection was swept away. About ten years ago I planted in a piece of kitchen-garden ground of good quality three beds of about three hundred bulbs. They came up well, but I do not think I lifted half a dozen sound bulbs. My friend Mr. Banks, of Sholden Lodge, Deal, the most extensive amateur grower in England, continually loses large quantities of his bulbs. I saw his beds this year in October, and it was pitiable to see the gaps made in his best beds by the disease, although, as a general rule, it has not, I think, been so prevalent this year as usual. Lord Hawke, who has exhibited the flower so well, says that his own home-saved bulbs have suffered very much, his imported ones not so much. Mr. Douglas did not think he had it, although many of his bulbs went off when they threw up their spike for bloom; but when I went to his beds we found the first bulb lifted affected by it, although many that I should have pronounced, from the appearance of the foliage, to be diseased, were not so; while Mr. Lombard, who is or has been a large amateur grower in Dublin, has been compelled to give up his extensive culture of them owing to the same cause. Monsieur Souchet, *par excellence* the Gladiolus grower, with all the advantages of soil and the fine climate of France, is oftentimes greatly harassed by it. Thus, the testimony regarding its existence seems universal. And now what is it? what causes it? and can it be remedied? I have no theory to propound, and can only express my opinion that the reasons adduced for it are inadequate.

The disease first attacks the corms in the form of small black spots, which gradually spread over the entire corm. Sometimes the layers of the corm are distinctly marked by the black lines which indicate the presence of the disease in a virulent form, the foliage having previously exhibited a rusty unhealthy look. When the bulbs are lifted the disease rapidly accelerates its pace until the whole perish of a sort of dry rot, shrivelling-up into a small compass.

The causes of this decay have been stated to be—

1st. The high breeding of the flower, and the want of new blood.

In answer to this, I would reply that I have seen it in a very virulent form in *Gladiolus brechleyensis* and Fanny Rouget, both raised many years ago, and considered generally to be amongst the hardiest flowers that we have; while I, at any rate, have found such bulbs as Meyerbeer and Madame Furtado, both highly bred flowers, not so liable to it; and of the new varieties of 1871, Phœbus, a very highly bred flower, seems to be very vigorous. The same cause has been assigned for the Potato disease, but it is well known that tubers imported from Peru have been as virulently affected as any other. All highly bred flowers are more or less delicate, but then the extra care bestowed on them—as in the case of animals—compensates for this. The race horse may be more subject to disease than the cart horse, but then from the difference of treatment it receives its life is quite as good as that of its humbler relative.

2nd. Too high cultivation.

It has been said that the quantity of manure used seriously affects the bulbs and engenders disease. If the manure were used fresh there might be some weight in this, but evidence which has come before me disposes of this. Mr. Banks has

tried experiments with his bulbs. He has planted them in beds without any manure whatever, others in beds with bone dust, others in fresh ground, and yet under all these circumstances the disease has appeared, and most violently of all in the unmanured beds. I have taken the trouble of excavating my beds and laying the manure 5 or 6 inches lower than where the bulbs are planted, and yet the disease has appeared; while, strangest of all, I have seen over and over again two shoots proceeding from the same bulb, forming two first corms. One of these when taken up has been perfectly sound, the other wholly diseased.

3rd. Non-ripening of the bulbs.

This reason is disposed of by the simple fact that the French bulbs are taken up long before they are matured, and that seedlings and small blubs, which are always later in starting, can never be left until they are matured, many of them showing flower even at the end of October, and yet these small and late-flowering bulbs are generally as free from the disease as others.

4th. Exhaustion of the bulbs.

This is hardly worth noticing, but a writer in one of our gardening journals devoted two long papers to a consideration of the disease, and actually propounded this as the cause, believing that, like the Hyacinth, the same bulb was lifted from year to year, instead of, as we know, the corm dying and fresh ones being produced; while the fact that seedlings that have never bloomed have been found affected by the malady is conclusive proof that exhaustion from flowering could have nothing to do with it.

I am afraid that those who read this paper will think that I belong to that numerous class of philosophical (save the mark!) writers, who are famous hands at pulling down but build up nothing instead, for really I have nothing to propose. I consider it, as I have said, analogous to the Potato disease; and the analogy is no way disturbed by the fact that we know nothing at all about it, for surely the letters that have appeared in the public papers show that we are as much at sea with regard both to the cause and remedy as we were when it first appeared. So with the Gladiolus disease. Growers may say this is cold comfort. Well, it is. I wish I could give any better. I did try this year two of my beds with powdered charcoal, and I think that they were less affected by disease than the third; but then, I believe, others have tried it without any good results. Therefore, as there are drawbacks in every enjoyment—as the worm-i'-the-bud will destroy the bloom of the Rose, as the wireworm will eat through our Carnations, and black spot destroy our Auriculars, so the grower of the Gladiolus must make up his mind to losses from a disease which he seems powerless to prevent or cure.—D., *Deal*.

LARGE-CROWNED PINE APPLES.

I AM inclined to think that the process described by Mr. Wipf at page 359 is not likely to be of service to many, if any, of your judicious Pine-growing readers. The value of such slow-producing-sucker sorts as Charlotte Rothschild, Smooth-leaved Cayenne, Black Jamaica, and Prince Albert is too well known to those who grow them for the crowns to be maltreated in the manner described, as they, with careful treatment, within the space of eighteen months produce fruit equal to, if not better, than the plants from which they were detached, a result which could never be derived from those operated upon by the screw. This sunless season, with few opportunities for liberal air-giving, has favoured the production of large disproportionate tops. A humid stagnant atmosphere, and heavy dampings overhead, are, however, the principal promoters. To insure a modification of undue proportions, damping overhead should be discontinued, and atmospheric moisture greatly diminished during dull weather. Non-symmetrical unsightly crowns are rarely met with in the stove of the skilful cultivator.—J. M. C.

SOLANUM CAPSICASTRUM CULTURE.

THE best exhibition of this plant that I have seen was in Windsor Royal Gardens, grown by the late Mr. Rose, who stated that he grew them on so large a scale because Her Majesty admired them.

Mr. Rose had them of every shape and height, from 4 inches to above 4 feet, thickly berried; dwarf plants covering 6-inch pots, and resting on the shelves 9 inches. Mr. Rose and myself grew them in stiff loam because they do not grow so rank

in this, and loam adheres to the roots when repotting them for housing in September.

Plants from cuttings are better in every respect than seedlings. The Peach-leaved, dark-leaved and barked, is better than the light-coloured oval-leaved variety.—J. Ross.

REPORT ON GARDEN PEAS.—No. 2.

IV.—PRUSSIAN PEAS.

RIPE seed small, almost round, smooth. Skin blue. Foliage dark green, blotched.

HARBINGER.—This is the earliest of all the Peas, coming into use three days before Dillistone's Early, and six days before Sangster's No. 1. It was raised by Mr. Laxton from crossing Dillistone's Early and Alpha. The plant has the same habit of growth as Dillistone's, and grows from 2½ to 3 feet high. The stem is simple, producing from seven to eight pods, which are generally single, small, plump, and rounded, slightly curved, very tightly filled, and of a light green colour. They each contain about six peas, which are of an excellent flavour. Ripe seed small, round, light blue.

In the experiments of this year it was sown on the 23rd of February, the first flower opened on the 9th of May, the plants were in full bloom May 15th, slats appeared May 21st, and the crop was fit for use on the 6th of June. This received a first-class certificate from the Royal Horticultural Society.

KENTISH INVICTA.—This very closely resembles Harbinger, but is seven days later.

CARTER'S FIRST CROP BLUE.—This bears a very close resemblance to Burbidge's Eclipse. It is from 18 inches to 2 feet high, and of robust growth, producing from eight to nine pods on each plant, which are either single or in pairs. The pods are rather short, but broad, of a light green colour, very slightly curved, and blunt-ended. They contain from five to six peas of medium size, and do not always fill equally well. Ripe seed blue, large, round, and smooth.

This is six days later than Kentish Invicta, and thirteen days later than Harbinger.

GROOM'S SUPERB (Blue Spanish Dwarf; Blue Fan).—The plant grows from 18 inches to 2 feet high, and has a simple stem, bearing from eight to ten pods. The pods are single or in pairs, in about equal proportion, and contain six to seven peas in each. The ripe seed is small, round, and pale blue.

This is now almost entirely out of cultivation, being surpassed by several other varieties of superior merit. It comes into use at the same time as Woodford Marrow and Flack's Imperial.

WOODFORD MARROW.—Plant of a strong and robust habit of growth, like a vigorous-growing Marrow, with a stem 3½ feet high, which is sometimes simple, but generally branching at about half its height from the ground, and the foliage is dark bluish green and blotched. The pods begin to be produced at little more than half the height of the plant, and from that point to the top every joint produces single or double pods, amounting in all to eleven on each; they are single or in pairs, in about equal proportions, about 3½ inches long, seven-tenths of an inch broad, quite smooth, and of a very dark green colour. When ready to gather they are rather flattened, but as they become ripe they assume a round shape. They contain on an average eight peas in each, which are of a very dark olive green colour, rather thick in the skin, and very closely packed, so much so as to be quite flattened on the sides adjoining.

This is a very characteristic Pea, and may at once be detected from all others, either by the ripe seed or the growing plants, from the very peculiar dark green colour which, when true, it always exhibits. This variety comes in at the same time as the Imperials, and, on account of its fine dark green pod, is an excellent Pea to grow for market; but it is one that requires to be very carefully selected when grown for seed, as it has a great tendency to degenerate back to the Blue Prussian, from which it has evidently been raised.

BATT'S WONDER.—The plant is of a strong and sturdy habit, with a thick stem 2½ feet high, generally simple, but sometimes branching, and having large dark green foliage. The pods are produced in pairs, on an average of from twelve to eighteen on

each plant; they are curved like those of the Scimitar, and contain from nine to eleven good-sized peas. The ripe seed is small, dark bluish green, of the colour of that of the Woodford Marrow.

In the trial of 1859 this was found to withstand the dry weather better than any other variety; but in 1860 it suffered from the coldness of the season, and the pods filled irregularly. It is a very excellent and productive kind, as much so as the Scimitar, and the pods and peas are of the same dark dull bluish green colour as those of the Woodford Marrow.

GREEN NOYON.—The habit of growth is like that of Blue Prussian, having a stem about 2½ feet high, with deep green foliage, and producing eight to nine pods, generally in pairs. Pods pale green, small, round, nearly straight, containing five to six small peas. Ripe seed light green, small, round, and smooth.

It is in use at the same time as several other Peas of much superior quality, and is, therefore, worthless.

BLUE PRUSSIAN.—Plant of a vigorous but not robust habit of growth, with a single stem about 3 feet high, and which is sometimes branching. The pods are generally produced in pairs, but are also sometimes single, and vary from twelve to sixteen on each plant. They are from 2½ to 3 inches long, three-quarters of an inch wide, somewhat curved, and rather broader towards the point, where they terminate abruptly. They contain about seven peas, which are four-tenths of an inch long, seven-twentieths wide, and about the same in thickness, and compressed on the sides from being so close together. The ripe seed is blue.

This is a very old and popular variety, extensively used in field culture and market gardens on account of its great fertility—a character which it maintains superior to any of the other blue Peas, most, and indeed all, of which during the past season have exhibited much less hardy constitutions.

EVERGREEN.—This is a new variety of Mr. Laxton's, growing 5 to 6 feet high, and having the habit of Auvergne, with rather small pale green foliage. Stem generally simple, producing from fourteen to sixteen pods, which are in pairs. They are rather small, slightly curved, and blunt-pointed; very closely filled with from seven to eight medium-sized peas of a bright green colour, tinged with dark green. This is an inferior Pea, which comes into use at the same time as Scimitar.

V.—IMPERIAL PEAS.

Ripe seed large and irregular in shape. Skin thick, blue. Foliage large, dark green, and blotched.

NIMROD.—This new variety of Mr. Laxton's is slender in its



Carter's First Crop
Blue.



Nimrod.



Griffin.



Blue Peter.

habit of growth, and in general appearance resembles Alpha. It is from 3 to 4 feet high. The stem is simple, and bears from

seven to eight pods singly, each of which contain from six to eight deep green peas; they are full, much curved, and of a deep green colour, resembling those of William I. The ripe seed is round, indented, and bluish green.

This is the earliest of the Imperial class, and comes into use ten days before Fairbeard's Surprise, which has been for many years the earliest of all this section.

BLUE PETER.—This has the habit and growth of Tom Thumb, and is only one day later. It is from a foot to 1½ foot high, producing eight to ten large, broad, finely-coloured pods, which contain generally from five to six large peas, but they are liable to fill irregularly.

This may be called a larger, better, and earlier form of Tom Thumb, with round blue seed. It was introduced by Messrs. Carter & Co., and was so appreciated this season by the Fruit Committee of the Royal Horticultural Society as to receive a first-class certificate.

GRIFFIN.—This is another of Mr. Laxton's new Peas, but it does not possess the merit which characterises the generality of the race. The plant is 3 to 4 feet high, and in habit resembles the Frame class. The stem is simple, producing fourteen to sixteen pods, which are generally in pairs, each containing six to seven medium-sized peas, which are pale green, tinged with darker green, giving them a mottled appearance; the flavour is very inferior. Ripe seed small, deep green, mottled with darker green. This is seven days later than Nimrod, and four days earlier than Fairbeard's Surprise.

FAIRBEARD'S SURPRISE (Surprise; Early Surprise).—This variety and the Champion of England were raised from two peas found in the same pod; the former being round, and the latter wrinkled. They were selected by Mr. William Fairbeard, of Green Street, near Sittingbourne, from a crop of Dwarf White Knight's Marrows, a plant of which had exhibited a more than usual early character.

Surprise is a very excellent early Marrow Pea, somewhat earlier than Champion of England, but not more so than a day or two at most. The plant is of free but not robust habit of growth, and always with a simple stem, which is about 5 feet high. The pods are produced at every joint, beginning at about 3 feet from the ground, and number from eight to ten on each plant. They are generally single, but sometimes in pairs, from 3¼ to 3½ inches long, and three-quarters of an inch broad, slightly curved, but not quite so much so as Champion of England and Paradise Marrow. They contain from seven to eight peas in each, which are of a good size, but not so sweet as those of Champion of England. The ripe seed is somewhat oval, and of a pale olive-green colour. At first the pods are so flat as to give the idea that the peas are not sufficiently grown, but notwithstanding this appearance they are quite fit to be gathered.

Till lately this was the earliest of all the blue Peas, but now it is surpassed by the new varieties of Mr. Laxton. It is very much superior to the following.

HARRISON'S GLORY.—The only distinction between this and Harrison's Perfection is the blue-coloured seed, that of the latter being white. They differ in no other respect, being of the same height, equally productive of pods, which always fill very badly, and both come into use at the same time.

HARRISON'S ROYAL BLUE.—This is one of those singular Peas which in some of its parts is devoid of glaucousness. In its general aspect it is not unlike Danecroft Rival; but while that variety is quite glabrous, this is only so in the stem, stipules, and pods, the leaves themselves retaining the usual glaucous hue.

The plant is moderately robust, about 3 feet high, producing from fourteen to sixteen short, broad, slightly curved pods, which fill badly and irregularly, having only four to five peas in each, of very inferior quality. Ripe seed large, round, blue, flattened, and indented.

This is two days later than Fairbeard's Surprise.

BURBIDGE'S ECLIPSE (Stubbs' Dwarf).—The plant is a robust grower, always with a simple stem, attaining the height of 1½ to about 2 feet. Pods in pairs, rarely single, and from 3 to 3½ inches long, seven-tenths of an inch broad, perfectly straight, and of equal width throughout, with a slight waving on the upper edge. They contain from five to seven peas, which are ovate, nine-twentieths of an inch long, seven-twentieths broad, and the same in thickness.

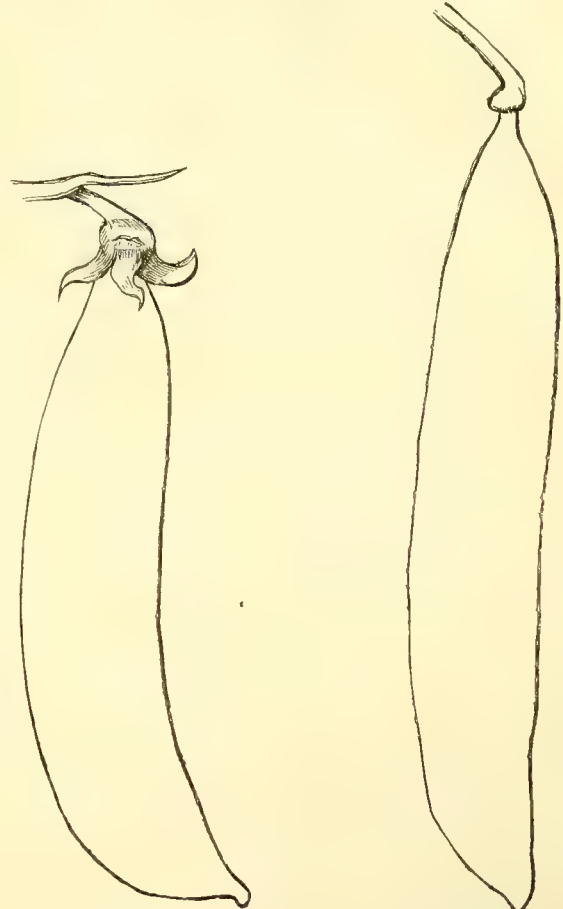
This Pea was raised in the neighbourhood of Canterbury by a person of the name of Stubbs, and hence called Stubbs' Dwarf, under which name we grew it nearly thirty years ago, before it came out under that of Burbidge's Eclipse, and which was given to it by Mr. Burbidge, a nurseryman at Buckland, near Dover.

This and Blue Peter are the dwarfest of the blue Peas, but Burbidge's Eclipse is about five or six days later than Blue Peter.

MOGUL.—This is the result of a cross obtained by Mr. Laxton between Prolific Long Pod and Little Gem. The plant resembles Burbidge's Eclipse in its growth, and is from 18 inches to 2 feet high. The stem is branched, producing eight to ten pods, which are generally in pairs. The pods are long, much curved and

pointed, plump and rounded, of a fine green colour, and containing from six to eight medium-sized peas. Ripe seed blue, large, round, and indented.

This is a very handsome and prolific Pea, but inferior.



Mogul.

Fillbasket.

FILLBASKET.—This is a cross between Laxton's Standard and Supreme. The plant is very robust, vigorous, and 3 feet high; the stem branching, and producing from twelve to fourteen pods generally in pairs, and which are very long, curved, rounded, of a fine bright green colour, closely filled with from seven to nine bright green peas of good size.

This large, handsome, and very prolific Pea comes into use at the same time as Bedman's Imperial. It received a first-class certificate from the Royal Horticultural Society.

FLACK'S IMPERIAL (Flack's Victory; Flack's Victoria).—The plant is of a robust habit of growth, with a stem which is always branching, and generally about 3 feet in height. The pods are very numerous, varying from twelve to eighteen on each plant. They are generally produced in pairs, but also frequently singly, and are from 3¼ to 3½ inches long, three-quarters of an inch broad, and considerably curved, but not so much so as the Scimitar, and, unlike that variety, the pod is terminated abruptly at the point, where it is somewhat broader than at any other part. Each pod contains from six to eight very large peas, which are of an ovate shape, half an inch long, seven-twentieths broad, and the same in thickness. The ripe seed is blue.

This variety, introduced about thirty years ago as an improvement on Bedman's Imperial, appears now to represent the varieties formerly known as Blue Imperial and Bedman's Imperial, and deservedly so, for it is the only one of the name really worth growing when true, and it requires careful selection to keep it so, from its tendency to degenerate into Blue Prussian.

BEDMAN'S IMPERIAL.—This for many years was the Imperial *par excellence*, but now it is far surpassed by the preceding variety; indeed, it is not worth growing.

The plant generally produces a single stem, which is from 3 to 4 feet high. The pods are generally in pairs, but sometimes single; 3¼ inches long, five-eighths of an inch broad, somewhat curved, and terminating abruptly at the point. Each pod contains from six to seven peas, which are of an ovate shape,

and about the third of an inch in their greatest diameter.] [The ripe seed is pale blue.

BANKSIAN MARROW.—This is evidently a form of the Scimitar, but with a less curved pod, and partaking a good deal of the character of an Imperial. The plant grows to the same height as both of these, and the pods come into use also at the same time. Though a good sort it is not materially distinct, and does not possess any superior merit.

BLUE SCIMITAR (*Blue Sabre*; *Scimitar*; *Beck's Eclipse*).—This well-known variety is now less grown in gardens than it was at one period before the new Marrows were introduced. It is, however, very valuable, particularly to a market gardener or farmer who supplies the markets with green pods, and it is now much more extensively grown for that purpose than for private use. But even for that purpose it is surpassed by the Champion of England, which is almost, if not quite as productive, and a more richly flavoured Pea. There are many of the large field growers about London and in Kent who supply the London markets, and who now grow the Champion of England in preference to the Scimitar.

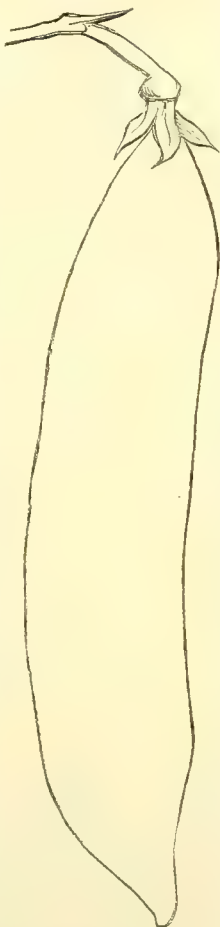
The Scimitar is a strong and sturdy grower, attaining the height of 2½ or 3 feet, generally with a single, but sometimes with a branching stem. The foliage and pods are of a dark green colour, and the plants produce on an average from twelve to eighteen pods on each. The pods are from 3 to 3½ inches long, four-eighths of an inch broad, very much curved and flattened. They are generally produced in pairs, but are frequently single, and contain on an average from nine to ten peas in each. The ripe seed is green. It is very prolific, and is without doubt one of the best varieties for culture on a large scale; but it is one which is very liable to degenerate, and demands very careful attention to preserve a pure stock.

SUPPLANTER.—This is appropriately named, for it is a large, handsome, and very prolific Pea, and will take the place of many others of this class which have hitherto held a prominent place. It is a cross obtained by Mr. Laxton between Veitch's Perfection and Little Gem.

The plant is very robust and vigorous, 3 feet high, with deep green foliage like that of Woodford Marrow. The stem is branching, producing from fourteen to sixteen pods, which are in pairs, very large, broad scimitar-shaped, of a deep green colour, and containing from seven to eight very large peas, which are also of a deep green colour. The dry seed is very large, bluish green, flattish, round, and sometimes indented.

Sown on the 23rd of February, the first blooms appeared on the 26th of May, and the plant was in full flower on the 30th. Slats appeared June 2nd, and on the 1st of July the crop was ready for use.

This received a first-class certificate from the Royal Horticultural Society.—H.



Supplanter.

SOUTH ESSEX CHRYSANTHEMUM SOCIETY.

This Society cannot boast of the antiquity of that at Stoke Newington, but it is not quite a new Society, as it was instituted in 1859, and the fourteenth annual Exhibition was held in the Artillery Hall, Stratford, on November 16th and 18th. Having visited the principal Chrysanthemum shows in the neighbourhood of London for some years past, we are in a position to say that the specimen plants exhibited here are not surpassed, and seldom equalled, by those at any of the other shows, and this year there is no falling-off as regards quality. In the two classes of dwarf-trained Pompons, Mr. J. Douglas, gardener to F. Whitbourn, Esq., Loxford Hall, was first with admirable specimens. In standards, Mr. Hulbert, gardener to G. Scott, Esq., Stratford Green, was first with nicely trained specimens. In dwarf-trained plants of the large-flowered section the merits of the plants were so evenly divided, that the Judges ultimately awarded equal first prizes to Mr. Simmonds, gardener to Alderman Finnis, Wanstead, and Mr. J. Douglas.

The best standards came from Mr. Whitbread, gardener to F. Sewell, Esq. The best varieties for specimens are Mrs. G. Rundle, Beauté du Nord, Eve, Prince of Wales, Venus, Lady Harding, Little Pet, Beethoven, and Golden Trilby (Forsyth). Mr. J. Douglas had the best six Japanese. This is a class that should be represented at all the Chrysanthemum exhibitions, but they ought to be exhibited as cut blooms.

For twenty-four incurved blooms (open class) Mr. Douglas was first, the prizes for twelve and six going to Mr. Brown, gardener to W. Weston, Esq., Abbey Wood, Kent. In the amateurs' class for twelve and six, E. Saunders, Esq., Paul's Wharf, City, carried off the highest awards. In large-flowered Anemones, and in bunches of Anemone Pompons, the premier prizes fell to Mr. Douglas. A distinctive and highly interesting feature of this Exhibition is the prizes offered for decorative plants for the dinner-table, the plants to be grown in 6-inch pots. Mr. Simmonds had the best lot; it contained handsome Palms and Dracenas. A very choice collection of Ferns, Lycopods, and fine-foliaged plants was sent for exhibition by Mr. R. W. Waites, nurseryman, West Ham, and as they were effectively arranged amongst the Chrysanthemums, they had a charming effect. Mr. Shipman showed a cinnamon-coloured sport of Lady Harding; it is a nicely incurved flower. Mr. Scarlet, gardener, Ham House, Upton Park, received a first prize for twenty dishes of excellent Pears and Apples.

This Society is very prosperous; it is very liberally supported by the gentry in the district. We hope it may long prosper, and continue to encourage the growth of this grand winter flower.

ELECTION OF ROSES.

ALLOW me to make a few remarks which may, perhaps, tend better to bring out the desired expression of public opinion on this head, and enhance the value of the decision that may be ultimately arrived at.

In the first place, it is obvious that the value of any such decision depends upon these two things—viz., the qualification of the electors, and the grounds upon which their votes are given. Now, in your impression of the 31st ult., Mr. Hinton states the questions he proposes to ask, as well as the persons whom he wishes to vote. In the former I think he is too vague and general, and in the latter too liberal. For example: I am very doubtful about the value of the opinion of "the more modest Rose-grower," in which category I place myself; for although I may have my ideas and, mayhap, my whims about good Roses, I really should not feel myself qualified to act as judge between stands of Roses exhibited by the Messrs. Paul, Cranston, Turner, and others; and therefore think that the election proposed should be confined to those who are, unless the so doing would throw it into the hands of professional nurserymen, who might possibly be influenced by the *auri sacra fames*. In the second place, to enhance the value of any decision that may be given, it is before all things necessary that we clearly understand the grounds upon which each vote is given.

Mr. Hinton's questions as they now stand entirely ignore this point, and in my humble judgment are far too vague and general, if not impossible, to answer. Thus in question 1, he asks, "Restricted to one Rose for all purposes, which would you select?" This is obviously so difficult to answer that he himself confesses it is not at all improbable that a regular outsider may beat the first twelve favourites in a canter! But if so, *cui bone*? Surely the lucky winner will be amongst the best fifty, and belong to the man, if such there be, who possesses but one solitary tree, as a reward for his sagacity and choice!

Again, in question 3 we are invited to "name what we consider the best fifty Roses in cultivation, and to underline out of this fifty those we consider the best twelve." Here we are necessarily driven to searching comparisons, and the first question that immediately arises is, "Best" for what? Best for exhibition, or best for ordinary garden decoration? which I take to be two widely different things that ought to be definitely referred to in every answer. Or, again, "best" in what respect—for colour, form, or size? How are we to compare things totally different in qualities like these? It is impossible to do so, and any decision apart from such considerations clearly expressed in the answers given, must be in the highest degree unsatisfactory and of but little value.

By way of amendment to the questions proposed, I would suggest that each of these points be put in a tabulated form before every voter, and a definite answer to each be given by each elector. I would further take colour as the chief standard of comparison, and request each voter to name the best three Roses of each of the following fifteen gardener's colours—viz.,

white, flesh, pale peach, yellow, fawn, salmon, rose, pink, carmine, cherry-red, scarlet, maroon, crimson, purple (blue), and black. Further, I think, form and size should not be left out, for many votes will undoubtedly be influenced by these considerations, and deservedly so, for I say at once for myself, that I should discard all the globular and cup-formed tribe from any selection, as not to be compared for a moment to the open recurved flowers, whilst the small ones, as a rule, would find but equally scanty favour. Be this, however, as it may, an election and selection based on the above three definite cardinal points would be of real service to every Rose-grower, and assist many who, like myself, may be desirous of planting by way of contrast a row of some forty or fifty of the best kinds for a border, including specimens of every colour, as he would be able most safely to do when the result of the coming election, if carried out on such principles, was known, but which he would have great difficulty in doing if only a simple answer were given to the above very vague and general questions of Mr. Hinton, without any reason assigned for the grounds of the electors' choice.—SÉNATEUR VAISSE.

[We publish the above letter with the following remarks from the Rev. C. P. Peach:—

In selecting twelve and fifty best Roses it is generally understood that those Roses only should be chosen which are good, not only for exhibition purposes but for garden purposes. In judging Roses as cut for exhibition, each Rose is judged for its own individual merit as a bloom, apart from any merit that the tree itself may possess, and no Rose would be judged either for its form alone, or its colour alone, or its size alone; the best Rose on an exhibition table is that which is best in all these points, and a failure in any one point would at once lose it a mark. There are also other points to be taken into account in judging, and these are beauty and vigour of foliage, and freshness of colour, also whether the Rose is at its best—for instance, a Rose may not be sufficiently opened (too much in the bud stage), or it may be rather *passé*; in the first case it has not reached its full development, and therefore it is difficult always to decide how good the Rose may be when fully opened, and in the second case the Rose is past its best. There are several Roses, again, as Madame Furtado, François Lacharme, and Henri Ledechaux, which are beautiful on the exhibition table when shown at their best, and which would not be classed among the best fifty Roses, because they are too weak in habit for most gardens. I have found as a rule that amateurs are quite as capable of forming correct judgments as to Roses as nurserymen, provided always that they have grown sufficient Roses to be familiar with the best examples. Nurserymen have the advantage in judging new sorts, as obtaining them earlier, and very often seeing them for one or two seasons before they get into amateurs' hands. I do not think the classification into colours available, because no two persons would agree as to the tones of colour so as to distinguish between flesh and pale peach, fawn and salmon, rose and pink, carmine and crimson, and so on; besides, who has three black Roses or three purple Roses (blue)?

I think that the election of Roses carried out by Mr. Hinton will give very nearly correct results, because the number of persons voting will correct eccentricities and fancies, and as a general rule those Roses which are best for exhibition purposes are also best for gardens; in fact there are few exceptions to this rule, and it is hardly worth anybody's while to grow ordinary garden Roses—that is to say, Roses not fit for exhibition, when so many of the finest varieties in cultivation are quite as easily grown. When the returns are made it will be desirable to give the colours as approximately as possible, and also the growth, habit, &c., so as to give information to intending planters.—C. P. PEACH.]

PRESERVATION OF WOODWORK.

Underground.—Take boiled linseed oil, and stir-in pulverised charcoal to the consistency of paint. Put a coat of this over the timber, and the exclusion of damp will be perfect. Bass-wood posts have been taken up after having been set seven years, that were as sound when taken up as when first put into the ground. Time and weather seemed to have no effect on them. The posts should be well seasoned before the oil and charcoal are applied, and the paint should be thoroughly dry before they are put into the ground.

Out-door.—The best priming for old woodwork, and, in fact, all woodwork that is exposed much to the weather, is simply

Spanish white, or, as it is commonly called, whiting, mixed in pure, raw, linseed oil; let it stand until it is thoroughly mixed, then reduce with oil, and add the drier sufficient to dry it. This makes a good, hard, durable paint for first coat. Reduce it to an ordinary thickness for priming, and apply with an ordinary brush. It must be thoroughly beaten together, so as to work out all the lumps of the whiting. If colour is desired, or the woodwork is very much stained by age, take about one-half common whiting, one-half white lead, throw in small portions of red lead and chrome yellow to overcome the blackness of the wood, or add umber for a drab colour. Fresh paint is always best. Small portions of Venetian red and lampblack will do for a dark colour.—(*Mechanics' Magazine*.)

NOTES ON DENDROBIUM.—No. 1.

DENDROBIUM is one of the most numerous genera of Orchids, comprising some of the most lovely objects in the whole order, and, being of comparatively easy culture, they are highly esteemed by most cultivators. In their habit, as well as in the colour of their flowers, they are very variable, some having minute growths only 2 or 3 inches long, while others are furnished with gigantic growths from 5 to 6 feet or more in length. The flowers vary in colour from a green or yellowish white to the richest yellow, rose, purple, and some almost indescribable tints. By paying a little attention to forwarding and retarding the blooms as needed, Dendrobiums may be had in flower every month in the year; indeed, I have not the least doubt but that this may be done with one species alone—namely, our old favourite *D. nobile*. Most of the Dendrobiums being of a pendulous character, they are well adapted for cultivation in hanging baskets. Some succeed well on blocks of wood, and others of more sturdy and upright habit may be placed in pots; but for convenience, if room is scarce, these may be suspended from the roof, and under these circumstances they have, doubtless, a better chance of ripening their growths, which it is important that they should do in order to insure a free-flowering habit.

To grow Dendrobiums well, attention must be paid to the growing, and also to the resting season. Naturally they are found principally on trees, mostly those overhanging running streams and rivers. On this circumstance we must lay the foundation of our treatment, and that needed during the growing season will first claim our attention. The species which come from India and the Indian islands of course require the warmer house; those from Australia will do well in a comparatively cool one, although some of them are benefited by a little more warmth while growing.

The East Indian species, by far the largest number, should be placed in the Indian house as soon as any signs of growth are perceived. A brisk temperature must be maintained, say from 70° to 85°, or even higher by sun heat. Never allow them to become dry at the root, at the same time keep up an abundance of atmospheric moisture, and during hot bright days an application from the syringe overhead will be found very beneficial. Maintain a clean and healthy state of the foliage, which would otherwise soon become the victim of red spider. I may say, when using the syringe be careful not to lodge any water in the points of the growths, otherwise they are apt to decay. With regard to air, it should be given as freely as the external temperature will permit, so as to carry off any superabundant moisture that may rise.

When attacked with green or yellow fly during growth, great care should be taken in smoking; choose rather to operate often than with an overdose to injure the plants, which are tender at that stage. In case of thrips, Pooley's tobacco powder will be found a safe and effectual remedy, dusting it rather thickly on the plant. Let it remain for several hours, then syringe or sponge it carefully off, applying it again if the thrips has not all disappeared.

As soon as growth is completed the plants should be removed to a cooler house, where they can obtain plenty of light, and there gradually dry them off to a certain extent—not so as to allow them to shrivel to any great degree. The back bulbs are almost sure to do so, but if shrivelling is perceived in any of the leading growths, stop it at once by giving little moisture at the roots. I might remark that should any plants seem inclined to push another growth, it is as well not to check them till that is completed.

The compost best suited for the Dendrobiums is fibrous peat mixed with some small-broken crocks, silver sand, and sphagnum moss. Let the pots, pans, or baskets be perfectly clean

and well drained; allow the plant to be somewhat elevated above the rim, then place a layer of moss on the surface, which will give the whole a neat and finished appearance.

I shall confine my remaining remarks to some of the most notable and desirable species.

D. nobile is so well known that it needs no comment, save that, as in most cases, if grown in a hanging basket, its flowers are seen to a much greater advantage than when the plant is in a pot and tied up with sticks.

D. Linawianum (*D. moniliforme* of gardens) is similar to the above. The flowers, however, are rather smaller, but not less effective, and their being produced in winter greatly enhances the value of the plant, which should make one in every collection.

D. heterocarpum is another species well worthy of attention. This also flowers in winter. A plant now in flower has produced seventeen blooms from one growth. It is not so attractive as some of the species, still its lasting properties, as well as its being deliciously fragrant, should at once make it a favourite. If placed in a cool house it will continue in perfection from six to eight weeks.

D. macrophyllum.—A plant in flower will scent the air with an odour resembling druggists' rhubarb. The flowers are of a rosy pink with darker veins. It blooms in spring, lasting about a fortnight in perfection.

D. macrophyllum giganteum is a magnificent variety, with flowers much larger than the above, in colour light rose and purple. It has a similar odour to the preceding.

D. lasioglossum, from Burmah, is one of the most splendid forms of the genus. The flowers are produced in clusters on the young growth at the same time as the foliage; they are ivory white, slightly broken with rosy purple, and present an extremely chaste and beautiful appearance.—C. J. WHITE.

PERMANENCE OF STANDARD ROSES.

In 1835 I planted in my garden a standard Baronne Prévost Rose. In 1842 I removed it, also in 1860. In 1871, the past year, I again removed it in November. I am well pleased to say it is in good health and doing well, having given a profusion of bloom during the summer to the admiration of all. It may be seen in my garden at the present time, thirty-seven years old, and from its appearance it will yet last many years.—HENRY EDWARDS, *Buch Hyde Gardens, St. Albans.*

HARDY GEMS.—No. 6.

SCHIZOSTYLIS COCCINEA.—In this we have a really hardy and beautiful plant. It was introduced about 1863 from Caffraria, where it seems to be widely distributed. For some time I was doubtful if it would withstand the rigours of our winters, but its having done so for the last four seasons leaves no further room to doubt. It attains a height of some 3 feet; the leaves are sword-shaped, and arranged in a distichous manner; in fact, it resembles a dwarf *Gladiolus* in its general outline. The flower-spike is distichous, bearing from twelve to fourteen flowers of a bright crimson colour, upwards of 2 inches in diameter, and resembling those of *Tritonia aurea* in shape, but having broader lobes.

PALAFIXIA HOOKERIANA.—I have not seen this beautiful Composite for some time; nevertheless, having now obtained a little seed, I hope to be successful with it. It was named by Torrey and Gray after that distinguished botanist, the late Sir William J. Hooker. It usually grows from 3 to 4 feet in height; the leaves are alternate, entire, and some 3 inches in length, somewhat rough on the upper, but smooth on the under side; the flowers are produced in many-headed corymbs, and are rosy pink or red, coming into beauty about the end of July and in August. It thrives in an ordinary border, but the ground should be well drained. Native of Texas, Arkansas, &c.

ANEMONE ANGULOSA.—This lovely mountain gem belongs to the section of this genus known by the name of *Hepaticas*; and although we are told by our botanical authorities that the distinctive character of this section as a genus has broken down, it will still retain its hold upon amateurs who grow these really charming plants. This is a robust-growing species, much larger than any other *Hepatica*, and its flowers, which are very large, are of an intense azure blue. Its blooming season is March and April, and its home is in the mountains of Transylvania.

ANEMONE PALMATA is a very scarce and at the same time very beautiful species. It is a native of the high mountains of

Spain, and usually attains a height of 8 or 9 inches. The leaves are reniform, rich deep green, whilst the very large flowers are shining golden yellow, and produced during April and May.

ANEMONE APENNINA.—This [veritable gem of our British woodlands should find a place in every garden, where, once established, it forms during March and April a dense carpet of

large vivid blue flowers, which at that early season are enchanting, especially if grouped with *Snowdrops* and similar subjects.

ANEMONE RANUNCULOIDES.—In general appearance this resembles the preceding. It grows about the same height, but blooms in April and May, whilst its flowers are of a rich bright yellow colour.

ANEMONE VERNALIS grows about a foot high; flowers large, white, slightly suffused with purple on the outside, whilst the calyx is clothed with long brownish soft hairs. It comes from the mountains of Norway, and blooms with us during April and May.

ANEMONE BALDENSIS.—This rare plant is well deserving of more general cultivation. It seldom exceeds 6 inches in height, and is distinguished by its deeply divided leaves. The

flowers are large, pure white within, whilst outside they are tinged with bluish purple. It blooms in April and May. Native of the Swiss Alps.

All these Alpine *Anemones* delight in rich deep loam, if sandy so much the better, and it must be well drained. The plants also succeed best in sunny open spots.—EXPERTO CREDE.

FORCING SEA-KALE.

It is difficult to answer "X.'s" query as to which is the best way to force Sea-kale roots as advertised. Hardly anything else would better pay the purchaser than good roots so advertised. If put at once in soil or in pots in any dark place with a temperature of from 50° to 60°, a good return would be secured, and the Sea-kale would be all the better from the heat not being too strong. The finest Sea-kale is obtained in a temperature under rather than above 60°, though it must have about that temperature to bring it dwarf, compact, and succulent, not long-legged, but averaging from 4 to 6 or 7 inches in length, the last the longest that ever ought to be sent to the cook.

Waving the particular case of "X." I would say, in the first place, that I have never seen finer Sea-kale than that which was grown in a close box in a kitchen, and as the heads came too fast the cook just moved the box farther from the fire. The box was 18 inches wide, 30 inches long, and 18 inches deep, and was covered on the top. I could not tell the number of dishes obtained from two such boxes. The getting of the roots was real economy. Besides a little watering at first, and keeping light out, little more was necessary to have this fine vegetable all through the winter months.

I have already described how some have had Rhubarb in their kitchens all the winter, and the same thing could be done with Sea-kale with just a little more trouble to keep light out, which could be easily done with a close covering. Any cellar or other place will grow Sea-kale in the winter months to perfection where darkness can be combined with a temperature of from 55° to 60°.

For encouragement let me state that fine stubby Sea-kale, as good as the finest I ever saw in Covent Garden, was pro-



Anemone ranunculoides.

duced from purchased roots in a sort of subterranean way to the stokehole that heated some houses in Pimlico. There were lots of recesses in that way under ground, and, the door kept shut, there was a nice genial warmth all the winter, and in these recesses there was space sufficient for Sea-kale, Rhubarb, and Mushrooms all the winter, and when fire heat was not wanted Mushrooms were grown in summer. Even in these days it is a good thing to have a gardener who can find a place to suit his purpose, instead of standing still until a place is provided for him. There are hundreds and thousands of places in London and its suburbs where Sea-kale, Rhubarb, Asparagus, and Mushrooms could be had all the winter through for the expense of the roots or spawn, and their appearance in the kitchen would make quite a pleasure; there would, besides, be the luxury of giving a present to friends. In this matter I speak from experience. At one time there was not such a thing as the heat of a stokehole in London, but I brought it to aid the dining-table; and even now, with all our improvements, I can see that more may be done to utilise every escape of artificial heat.

So much for generalities; now to the case of your correspondent who can command stable dung and leaves, and means to purchase these advertised roots of Sea-kale. In such a case I would advise making a bed of the dung, say 18 inches deep, and placing as much leaves on the top. But then that may be too hot, or not hot enough, according to the character of the material. If he is knowing in these matters I would leave it to your correspondent, merely placing the roots thickly in soil on the top of the bedding material, and covering all over with a box reversed, such as orange boxes that may be had for a few pence. It matters little how flimsy the box is, provided it excludes light, as one can place a little litter, &c., over it.

To a person inexperienced in small hotbeds I would recommend, not the placing of the roots over a hotbed at once, but packing the roots closely together in 8 to 12-inch pots, and then plunging the pots in the bed. By this mode one can regulate the heat to a nicety. If the heat is too strong, raise the pots up; if the heat is not sufficient, add a little more dung and leaves. Then, if the heads of Sea-kale come more freely than required, take a pot or pots out, and set them where they will be cooler and yet dark. I grow lots of Sea-kale in a Mushroom house in winter, but I find it desirable to grow a lot of roots in pots, and then, according to the requirements, these pots are taken out, covered with a similar-sized pot, and kept in the dark until the produce is to be cut for use. Until used to it—that is, able to calculate the present and continuous heat in a hotbed, which can be learnt from experience only, I would recommend placing the roots in pots, so as to be completely under control.

Any rough old box that excludes light will answer as well as the best that could be made. I have in London used the slim orange boxes with good effect, but anything would do. I have cut scores of dishes from a bed, the sides raised 8 inches above the bottom, and an old door laid over it. The inexperienced, however, had best use pots at first, as it is thus more easy to regulate the heat and to keep the heads for a future occasion when not particularly wanted at present. As already stated, I often take half a dozen pots coming in from the Mushroom house to a cool shed, and cover them up, so as to cut them a week or a fortnight later. Keeping the kitchen authorities quiet depends on such little arrangements. It is bad policy ever to allow the inmates of the hall or dining-room to become tired of any one thing. Sea-kale every day would be a nuisance.—R. F.

A WORD FOR GARDENERS AND THEIR APPRENTICES.

THE late Mr. Hector Rose was my last apprentice in Scotland. Soon after his settlement in Windsor he came to see me, for which I thanked him, expressing my gratification that in his rare success he did not forget me. "Oh!" he replied, "did you expect that I could forget you and the Morello Cherry tree that you made me unmail after I finished nailing it? You then said that if I could not train properly I must give up nailing altogether. Nor was this all: you used to tell visitors who admired it that it was trained by the youngest apprentice. Now, sir, had you given me £100 that day I should have benefited comparatively little by it, but unmailing that tree was to me a life benefit. I made men unmail trees more than fifty times, hoping they also would find it good for them.

I cannot express my gratitude to you for your pointedness on my first start into the world."—JOHN ROSS, *Surbiton*.

JOTTINGS ON THIS YEAR'S GARDENING.—No. 4.

ONIONS have been small, not half the crop of last year. The late kinds—James's Keeping, Deptford (Strasbourg), and Blood Red are largest. Nuneham Park, Bedfordshire Champion, were poor; and the same holds good of the Globe. We have had no grub, a dressing of guano just when the crop is of the thinning size keeps it off.

CARROTS and PARSNIPS were attacked by the grub; they were made quite black with soot and white with lime, and thus they were enabled to outgrow the attack.

BEET and TURNIPS have been good. To keep down fly in Turnips nothing is better than a dusting with quicklime on a dewy morning, and a sprinkling of guano with a third part salt to drive them away quickly. It also saves them from club or fingers-and-toes. My soil is so often under the Cabbage tribe that I was never certain of a crop until salt was applied, one peck to 30 square yards, prior to sowing or planting. I think the salt is improved by adding two parts of guano which also contains a large proportion of salt.

LETTUCE has been extra this year. I would particularly note Kingsholm, a magnificent Cos, large, heading closely, crisp, and excellent. I sent some to a clerical gentleman in London. He wrote me—"The Lettuces were really quite magnificent and most delicious, I never saw such fine ones." Alexandra White Cos is a fine kind. I have it now along with Paris White Cos, of which the Alexandra and Kingsholm are very close allies, probably selected stocks. Both, however, are improvements—larger and stand longer. All the Year Round and Neapolitan, of the Cabbage Lettuce section, have been and are good.

CELERY is good as regards the first crops, but the late crop, from being grown between Peas, is very late and will be small. I do not regret this, for I find it does not run so soon in spring when small as when it attains a large size before winter. We had Sandringham, Veitch's Silver White, and Williams's Matchless good this year in May. I think Sandringham the very best of all Celeries. There has been no fly this year. The best preventive is to dress the plants while wet with soot.

I have Conover's Colossal ASPARAGUS by the side of plants from seed of our old plants. Though not yet able to give a decisive opinion, I may say the difference, if any, has not manifested itself. Our Asparagus has made a much less growth than usual this season.

GLOBE ARTICHOKEs go off early in August, losing almost every leaf, rest about six weeks, and then commence growing rapidly, throw up heads in October and later, and continue growing through the winter; some survived last winter. Had I the opportunity I would put over them a glass covering, and with protection over them in severe weather I have hopes of commanding this esteemed vegetable in winter and spring very much earlier than usual. We well cover up the plants with litter, though this Artichoke has every appearance of being hardy.

TOMATOES I planted out in front of a Peach house, letting the shoots trail on the ground. I was told I should have a good crop in this way, but I had only stalks and leaves, and they went off very suddenly.

VEGETABLE MARROWS were cut off by frost at the end of September. The Long White does best here; Custard does not succeed.

Altogether the season drawing to a close has been favourable to most vegetables, the great drawback has been in Potatoes. With regard to the disease, I may say that this day, in removing soil from a frame, we found some Potato plants with the haulms very green, and tubers about half grown, not a speck of the disease on the leaves, stems, or tubers. They are the produce of tubers left in the soil at taking up the new or unripe crop in May; and coming up along with Melons depending on lining for heat, the Potatoes were allowed to grow. I wanted to know if Potatoes would take the disease late in the summer in a frame, and what I care about far more, if by planting a frame at the close of July or early in August with seed of those that were forced, we could not have new Potatoes in November, December, and January. I am now convinced we may, and, if all be well, will next year carry it into effect. I find nice dry new Potatoes are always welcome, and it appears to me we may have them the year round if we choose.

CAPSICUMS are no vegetable, but I have to say of Prince of Wales that it is a very compact-growing sort, with an erect stem about 6 inches high, and then forms a spreading almost flat head, and produces abundantly Custard-Marrow-shaped pods of a bright yellow colour. The plants may be formed into pyramids by putting in a neat small stick painted green, securing the stem to it, and bringing the points of all the shoots to the stake upward, then tying with matting. This shows off

the fruit better than when the head is flat, and the plants take up no more room than the pot; whilst a spreading head requires more space. A good plant in a 6 or 7-inch pot is a fine subject for decorative purposes, and must tell well as a table plant. It seems as if it would keep in good condition far on into winter, being in blossom now, bearing young fruit, many large green ones, and many ripe ones as well, which remain on the plant a long time without shrivelling.—G. ABBEY.

COLLETIA BICTONENSIS.

It is known to the majority of the readers of THE JOURNAL OF HORTICULTURE that this *Colletia* originated in the arboretum of the Baroness Rolle at the time the late Mr. Glendinning had the management of the Bicton gardens. It has been stated that it is a seedling from *Colletia horrida* crossed with *Ruscus aculeatus*. How the natural order Liliaceæ could have been impregnated by that of Rhamnæ your readers will form their own judgment, but from the specimen in full flower sent herewith you will perceive that it is not only a formidable but also an interesting shrub. To any of your readers who may wish to have an impenetrable fence it may be recommended with confidence as a plant well suited for the purpose when properly planted and cared for. It was named by the late Sir William Hooker, and considered by him to be a distinct species of a very useful and interesting order, and the plant is easily propagated by cuttings.—R. BEGGIE, *Bicton Gardens*.

[The subject of Mr. Beggie's letter is a most interesting plant, and in its general appearance bears striking testimony to his assertion concerning its adaptability for hedge-making. That it can be used for this purpose, however, is doubtful, if the statement of Sir W. Hooker that it is not a hardy plant be a true one. The leaves are very fleeting, and only to be seen on the very young branches and spines. The branches are of a pea-green colour, arranged in the peculiar decussate manner shown in our cut, and having sharp hard brownish red spines at their ends; the se-



Colletia bictonensis.

paloid (Endlicher), or petaloid (Lindley), floral covering is waxy white, with a greenish substantial-looking base formed by the fleshy ring found at the bottom of the tube, and which is peculiar to the *Colletias*.

Its origin has been the subject of difference of opinion between Sir W. Hooker and Dr. Lindley. In 1849 Mr. Barnes, then gardener at Bicton, sent a portion of the plant to Dr. Lindley, stating that it was a seedling raised by him from *Colletia horrida*, which is also known by the name of *spinosa*. Mr. Barnes in his communication made a very candid admission, which Sir W. Hooker was afterwards not slow in criticising. He says that when asked by Sir Philip Egerton whence he had obtained it, he was unable to say until reminded by the foreman of the arboretum that he had raised it from *Colletia spinosa* three years before. This dubious fact, the great unlikeness of the plant to its asserted parent in appearance and habit, and the following statement of Sir W. Hooker's, make one inclined to doubt the origin attributed to it by Dr. Lindley. Sir W. Hooker declared that he had described it, as *C. cruciata*, nineteen years before Mr. Barnes produced it, from a specimen gathered by Dr. Gillies on the eastern coast of South America. If this be really the case, and as it is not likely that Sir W. Hooker would be mistaken, the uncertain nature of Mr. Barnes' statements presents but little obstacle to our regarding it as a distinct species, and not as a sport of *Colletia horrida*.—Eds.]

LYTHAM HALL, LANCASHIRE.—No. 2.

SEAT OF COLONEL TALBOT CLIFTON.

It is known that Lytham in the time of the Domesday survey was called Lidun, but we have no special notice of the place until towards the close of the reign of Richard I., when Richard Fitz-Roger gave lands to the see of Durham, to found here a priory of Benedictine monks to the honour of God, St. Mary, and St. Cuthbert. The priory was suppressed in the twenty-sixth year of Henry VIII., and the lands seem to have been granted to Thomas Dannett, but in the reign of Philip and Mary they were granted to Sir Thomas Holcroft. His descendant, Sir John Holcroft, is said to have sold Lytham in 1606 to Sir Cuthbert Clifton, of Westby. It is certain that the latter possessed it in 1636, and it has continued in the possession of his descendants. Lytham Hall was erected between the years 1757 and 1764.

The mansion is a commanding brick edifice constructed rather for internal comfort than external show. Additions, I

believe, were made to it some years ago. Being situated on a level plain, the view from it is, of course, limited; nevertheless, from the upper rooms and even from the lawn, glimpses of the hills and moors of central Lancashire are obtained. The park, rich in herbage and large in size, is almost surrounded by the various plantations that have been reared for shelter and ornament. Pleasure grounds surround the mansion on all sides but the west, where the offices are, and the kitchen garden and forcing houses are to the north; they are surrounded by trees concealing them from the dressed grounds. In the latter were some good examples of bedding, all the ordinary kinds of plants doing well excepting *Calceolarias*, which, as at some other places, were evidently not at home. The *Coleus* looked well, and *Geraniums*, *Lobelias*, and *Verbenas* were all that could be wished. Plants remarkable for their foliage were, but sparingly introduced. The parterre immediately adjoining the

house, and another in a secluded corner, were both gay with floral beauty. One feature in the grounds ought not to be omitted—namely, a mound of considerable size and elevation, with a pathway ascending spirally to the top, where there is an ornamental summer-house, whence beautiful views all round can be obtained. Eastward the waving corn and rich grassy plains that lie between Lytham and Preston could be distinctly seen; to the south the broad estuary of the Ribble, with the town of Southport on its southern shore, was clearly shown, as was also the channel to the westward; while northward the trees nearly shut out the view. The formation of this mound and its surmounting must have been a rather formidable undertaking, where material for such work was not to be had from a neighbouring elevation, but they add greatly

to the interest attached to such a place, and give relief to the eye that may be weary of gazing on a flat surface.

Walks through the wood connect the mansion and the adjoining pleasure ground with the kitchen garden, which, though small, is surrounded by good walls, with broad outside slips on all sides but that next the dressed ground. The space being too confined to allow of the introduction of flowers, a very pretty effect was produced by grouping conical masses of Scarlet Runner Beans between the newly-planted pyramid-trained fruit trees that lined the sides of the main central walk. The plan was this: A number of ordinary Scarlet Runner stakes of 8 feet long or thereabouts were set in a circle a yard or so in diameter, and their tops all tied to a wire hoop of, perhaps, less than a foot in diameter, about a



Lytham Hall.

dozen such stakes forming a cone. Against these cones the Scarlet Runners were planted, and at the time of my visit they looked well, alternating as they did with a fruit tree that was intended to assume the same shape. These trees, too, I observed were perfectly free from every appearance of lichen, and Mr. Shepherd said he had not perceived any upon old timber trees about, thus confirming a view I took some time ago in an essay on the management of Kentish orchards, that salt, or the strong sea air, was unfavourable to the production of moss and lichen. Vegetables of most kinds were thriving, but Mr. Shepherd said that last year, which was dry, was not favourable to vegetable crops, but that with plenty of rain everything thrived, especially root crops. The Cabbage tribe does not succeed so well as some others, but stands the winter better than at many places, and some fruit trees are evidently not at home, while others are all that could be desired.

In a range of houses good black Grapes were produced in abundance, but Muscats, though good also, were evidently in want of a firmer soil. I was afterwards told by a gardener in

the same county, that although the fine, dark-coloured, sandy soil of west Lancashire produces excellent Grapes for a short time, it soon wears out. Lytham is an extreme case; the soil is in a great measure sand, and has evidently at some time been overflowed by the sea; now it is very dry. However, good Peaches are produced, and most kinds of vegetables are also good, but Lettuce and the like become scarce during dry weather. Withal, the ease with which such a soil may be worked in all weathers is not without its advantages, and I have no doubt many wish they had a portion of it in exchange for as much stiff land.

By the proprietor of Lytham Hall, an out-of-the-way fishing village has been transformed into a fashionable watering place, and the sandy plains of an uninteresting coast into park and pleasure grounds, thus offering an example of how much well-directed skill and perseverance can accomplish.—J. ROBSON.

[Our view is copied from a photograph taken by Mr. J. Wardley, photographer, Lytham.]

NOTES AND GLEANINGS.

THE ROYAL HORTICULTURAL SOCIETY'S COUNTRY EXHIBITION for 1873 is not to be held at the Park Farm, Bath, but in the Royal Victoria Park, Bath, a most beautiful spot.

— A MEETING of the General Committee for the recent EXHIBITION OF THE ROYAL HORTICULTURAL SOCIETY AT BIRMINGHAM

has been convened at the Great Western Hotel, this day, at one o'clock, to receive the statement of accounts and wind up the affairs of the Committee. The profit on the Exhibition exceeds the sum of £2080.

— In the spring of 1871, Mr. Pearce, the master of the

workhouse, St. Leonards-on-Sea, planted $3\frac{1}{2}$ lbs. of Paterson's Bovinia Potatoes. In the autumn the crop was dug up, and the whole of that year's increase, excepting 14 lbs., which were cooked, was preserved and planted in the spring of 1872. The total produce this year weighs 580 lbs., and none diseased.

— OLD DR. COOPER, of South Carolina, used to say to his students, "Don't be afraid of dirt, young gentlemen. What is dirt? Why, nothing at all offensive, when chemically viewed. Rub a little alkali upon the dirty grease spots on your coat, and it undergoes a chemical change and becomes soap; now rub it with a little water and it disappears. It is neither grease, soap, water, nor dirt. That is not a very odorous pile of dirt you see yonder; well, scatter a little gypsum over it, and it is no longer dirt. Everything like dirt is worthy of our notice as students of chemistry. Analyse it; it will separate into very clean elements. Dirt makes Corn, Corn makes bread and meat, and that makes a very sweet young lady, that I saw one of you kissing last night. So, after all, you were kissing dirt, particularly if she whitened her face with chalk or fullers' earth; though I may say that rubbing such a stuff upon a beautiful skin of a young lady is a dirty practice. Pearl powder, I think, is made of bismuth—nothing but dirt. Lord Palmerston's fine definition of dirt is, matter in the wrong place. Put it in the right place, and we cease to think of it as dirt."

— The following plants are now to be seen in flower in the PALM HOUSE at KEW—viz.,

Dahlia imperialis.—The florets of the ray are in a single circle, large, spreading, milk white, with a splash of crimson at the base; those of the disk are compact, and of a bright yellow colour. A most striking object among all the other rare and beautiful plants with which it stands in company.

Areca rubra and *Areca sapida*.—The inflorescence of each of these consists of two large, fleshy, waxen-looking spadices, breaking-up into many somewhat round, tapering branchlets, on which both the male and female flowers are associated. They are situated one on each side of the stem in successive axils of the old leaf-scars, just below the bottom of the sheath formed by the enormous leaves. In one case the pollen is being caught in a newspaper hung underneath, doubtless for the purpose of examination or fertilisation.

A splendid specimen of the flower of *Musa Ensete* is also there. It is a spadix about 4 feet in length, thickly covered with leafy dark crimson spathes, which spread out towards the base, but are still unfolded at the end, where they look like a gigantic bud. The reproductive organs are set within each of these spathes, the male or imperfect ones being in the upper ones, the perfect flowers in those below. The whole droops from out of the ascending leaves of the plant, and looks in every way worthy of the handsome bearer of it.

Chamærops humilis is also pushing forth from its summit spadices, which bear yellow male and female flowers of very small size.

— The following advertisement appears in a Canadian paper: "Will the gentleman who stole my Melons last Saturday night be generous enough to return me a few of the seeds, as they are a choice variety?"

— We regret to learn that Mr. JOHN MACKENZIE, of the firm of Blake & Mackenzie, of Liverpool, London, and Glasgow, died on the 16th inst. at Woolton, near Liverpool. Mr. Mackenzie was well known among the nursery and seed trade, and many will lament the loss of one who by his gentle manners had ingratiated himself into their friendship.

COLLECTING AND STORING TURFY LOAM.

HAVING run short of fine, fibrous, loamy material, wet as the weather has been, I had a quantity collected from a lane, and as rubbish was burning at the time, I had the turf placed grass side downwards over the burning heap until the herbage was charred and the sods somewhat dried. This, exposed for a week in an open shed to sweeten, will be excellent for potting, especially when large pots are used, as plants thrive all the better when, with the finer material or compost, there are numerous small pieces of lumpy fibrous stuff proportionate to the size of the pot and the shift—say from the size of field beans for 5 and 6-inch pots, to the size of walnuts for 8 and 12-inch pots. A little rough charcoal, with the dust excluded, from the size of peas to that of beans, is also of importance for keeping the soil open and allowing water to pass freely. For burning good-sized wood into charcoal, the old plan of smothering

all up with earth and turf, with small openings to keep-up a slow combustion, is the best; but it is not the best when you want to char lots of twigs and small wood. There is a risk that there will be more ashes than charred twigs. I now simply burn it in small heaps, either covering with a little damp litter, or without any covering at all, and as soon as the small wood is charred enough, then put out the products gathered into heaps, and when cool sift into sizes. A few faggots may thus soon be quickly charred, and after some trials there will be very little or no ashes. The finest dust is black, and is useful for top-dressing cuttings in boxes in winter, and for other purposes.

In making turf heaps I find it is best to have them from $3\frac{1}{2}$ to 4 feet wide, and to raise them some 5 feet in height, building them square, and then forming a span-roof with the turf. This soon becomes so solid as to throw off the rains. If that is at all doubtful, we lay a turf lengthwise grass side outwards, and fasten it on with a few wooden pins. Thus making the heaps, we can always secure dry sweet compost without occupying shed-room, and it becomes an easy matter to damp the compost as desired. The chief object in storing is to have the sods dry and well sweetened by the air without greatly decomposing them, or rotting-down their fibre. For this purpose a wide bed or stack is a mistake. The outsides, if well built, long after the grass has decayed will remain open and full of fibre; but the centre will have become so dense as to be little better for potting than good soil dug out of a field. Nay, if the flakey exposed matter were scraped off the ridges thinly from a ploughed field, it would be better on account of its greater sweetness. Such scraped sweet material will grow almost anything well, except the hair-rooted plants, which must have more or less of heath soil.

In stacks of turf, owing to the too great decomposition in the centre, I find that a bed from $3\frac{1}{2}$ to 4 feet in width is too wide, unless one or other of the following precautions, or similar ones, be resorted to. Having a lot of round drain-tiles $1\frac{1}{2}$ inch in diameter, for every foot rise in the stack two rows are placed along the bed some 15 inches from each other and nearest the centre. The tiles are not placed end to end, but a couple of inches or so apart, in order that the air may pass through the centre of the stack sufficiently to make all sweet, but not so as to cause much decomposition. A simpler mode, though not so easy to manage afterwards, is to put in layers or faggots of brushwood whilst building the stack. These seem trivial matters, but after taking great trouble in obtaining some suitable turf to stack for compost, it is important that the whole of the heap should be friable and well stored with fibre throughout. Of course, those who can only obtain a few barrowloads of turf for compost, may adopt the same system as is followed in the case of some scores of cartloads. The great point is just to get the grass decayed and the soil of the sod sweetened, whilst wasting as little as possible of the fibre. For years I have never been able to obtain turf to my mind, though I know of hundreds of acres at no great distance where the grass is so needle-like, and the turf for fully 3 inches so dense and full of fibre, that it is no easy matter to pull it to pieces. Such turf after having been stacked from six to twelve months is very valuable.

When out of turf soil I have often charred the grassy sides of turf so as to be able at once to use it. For many strong-growing plants this charred turf, broken-up by the hands, answers very well, but mistakes may be made in its use. Like a strong dose of concentrated manure, it will do injury. The chief precaution to be taken is to expose it thinly in a dry open shed for a week or a fortnight previous to use, and then in general plants flourish with it extremely well. That time of exposure would be sufficient if the prunings, &c., used were chiefly deciduous. In some cases I have used chiefly mounds of laurel twigs which had been burned to be out of the way, and then the sods would require to lie double the time before being used. I have tried charring laurel twigs the same as other small wood, but they are not worth the labour, for the charred material seemed to retain too much of the deleterious qualities of the twigs and leaves.—R. F.

ENTOMOLOGICAL SOCIETY'S MEETING.

THE first meeting of the present season was held at Burlington House on the 4th inst., the President, Professor Westwood, in the chair. A very extensive series of works on general natural history and entomology, presented to the Society since the last meeting, was placed on the table. A letter was read from the Secretary of the Haggerston Entomological Society, inviting the

members to the annual meeting of the latter. Mr. Samuel Stevens exhibited a number of curious varieties of British butterflies and moths, for the most part recently captured by himself, including *Pieris Daphidice*, and six specimens of *Argynnis Lathonia*, from the neighbourhood of Dover; a very beautiful variety of *Cynthia Cardui*, and a black *Callimorpha Dominula*, *Sesia asiliformis*, and *Sphinx Celerio* and *livornica*, taken near Brighton.

Mr. F. Smith exhibited a very extensive series of *Formicidæ*, captured in the Eden Gardens, Calcutta, by Mr. Rothney, a gentleman only recently arrived in India. The collection was very valuable, as it contained specimens of the various sizes of most of the species, which often differed so much from each other that the different members of one species might easily be, and in fact had been, considered not only as belonging to distinct species, but even to different genera. He also exhibited and presented to the Society the minute-book of the old Entomological Society, containing records of the meetings between 1806 and 1822, for the most part in the handwriting of the late Mr. Haworth, author of the "*Lepidoptera Britannica*," by whom the volume had been given to Dr. J. E. Gray, who had recently handed it to Mr. Smith. At the beginning of the volume were also the proceedings of the antecedent Aurelian Society from 1801 to 1804. Mr. Butler exhibited a fossil wing of a butterfly, in the collection of Mr. Charlesworth, found in the Stonesfield slate. It was very perfect, and approached nearest to the South American genus *Caligo*. Mr. Albert Müller read some notes on the habits of a small beetle, allied to the genus *Anobium*, which he had reared in some numbers from a large gall upon the *Quercus californica*, formed by *Cynips californica*, of which the beetle had taken possession. It had been named *Ozognathus cornutus* by Leconte, and its habits were quite similar to those of the Death-watch (*Anobium striatum*). Mr. R. L. Davis, of Walton Cross, exhibited a number of very well preserved caterpillars of butterflies and moths, which he had made for sale.

The President exhibited a collection of drawings of the transformations of Indian *Lepidoptera*, which had been forwarded to him by Major Hunter. He also made some remarks on the habits of the common Gnat. From July to the present time he had found considerable numbers of this insect in various rooms of his house, all being females, which sex alone is capable of inflicting painful bites. The windows of some of these rooms were kept closed, and the rooms darkened, yet each day a fresh supply appeared to replace those destroyed. During the day they remained stationary, but at sunset they made their way to the windows, against which they kept flying, as though endeavouring to escape and join their companions. It is, consequently, that at such time they may be most easily destroyed by persons desirous of being free from their attacks during the night. He had not seen a single male in his house during the four months that the females abounded.

A memoir by the Rev. R. P. Murray was read, containing "Notes on the Variations of Neuration Observed in Certain *Papilionidæ*," and also "Notes on the Catalogue of *Hymenoptera*," by the Rev. T. A. Marshall, of which a new part, containing the *Ichneumonidæ* and allied families, has recently been published by the Society.

THE SEASON IN LANARKSHIRE.

For several years prior to 1872 the rainfall had been considerably below the average, consequently the earth became too dry for healthy vegetation. This, combined with the late frosts, so checked and injured the growth of trees and shrubs that many of them show signs of decay, while not a few will never rally. The fruit trees in many cases being so injured is, I believe, the sole cause of the deficiency of the fruit crop for some years past. Gooseberries this year, although well bloomed and apparently set well, bore fruit only upon the wood of the preceding year. Plums blossomed and set well, but dropped all their fruit. What effect this wet year may have upon fruit and other trees in subsequent seasons remains to be seen; but it is evident that never did trees assume a more healthy appearance, while many, the first time for several years, have made large growths of new wood, notwithstanding the severe attacks of aphides during the early part of the year. Although we have suffered much in many respects from the superabundance of moisture, it is to be hoped that with moderate frosts during the winter we are on the eve of improvement.

I may here mention that in 1871 I discovered in the bud of the Hazel for the first time the same insect that has infested for upwards of forty years the Black Currant, and which I believe is not a very distant relation of that which infests the Vine. I have never been able to trace the existence of this insect before, or beyond the four-footed state in the bud; but that it infests the roots is evident, as can be easily seen

on examination, and on the leaves assuming a pointed appearance before the buds have been attacked. Although I have not been able to effect a cure as yet, the experiment I have tried may be interesting to those who may be experimentally inclined. I placed the insect upon glass, and surrounded it with paraffin oil, petroleum, and ammonia, and all had the same effect of paralyzing it. I am not aware that petroleum is injurious to the roots of plants; if it is not, might not a good quantity be applied to the roots of the Vine? The amount of rainfall has been up to November 5th no less than 51.71 inches—viz.,

January.....	11.06 inches	.....	Winty till the 25th.
February	3.02	.....	Warm throughout.
March 2.66	.....	.....	Cold with east wind.
April 0.77	.....	.....	Very cold with snow.
May 3.08	.....	.....	Still cold and frosty.
June 7.08	.....	.....	Still cold.
July 5.66	.....	.....	Second week fine, three frosty nights.
August 4.40	.....	.....	About middle fine.
September ..10.03	.....	.....	Rain nearly every day.
October 1.70	.....	.....	A fine month.
November.... 2.25	.....	.....	So far as gone stormy.

The beginning of January was stormy, towards the 25th fine, and the bees commenced carrying pollen. As the season advanced we hoped against hope; the farther the year advanced the less did the bees work, and by May, with early breeding and the hurricanes that drove bees into strange hives, many were queenless. The only good honey days the bees had were in July, although three nights in that month the thermometer sank to freezing-point, and one day it stood at 45° the whole day. The heaviest rainfall occurred in this month; in the space of an hour and a half, a 1½-inch rain-gauge was filled, but, notwithstanding this heavy rainfall, it was one of the best honey days the bees had. Up to August forty dry days were about all we had for the year. The year has been characterised by a generally cold atmospheric temperature, by the earth being very warm, by winds with an easterly under current, and by heavy rains. The wind would veer suddenly from south-west to north-east or east, accompanied with great darkness, the upper current continuing to blow from south-west and apparently settled. Fearful thunderstorms prevailed, although we have had no thunder overhead, nor have we had for about twelve years, or since a railway has been carried round us horseshoe fashion. The loudest thunder we had was in September, when it appeared to come direct to the bend and then to run first up the line, then down, but never coming overhead. Prior to the railway being laid down in this fashion, we had plenty of thunderstorms.

From the foregoing it will be seen that it has been a very unfavourable year for the crops. Potatoes a failure, Wheat the same, in Oats much loss, of Turnips in many cases there are none, and at present there is little hopes of getting in Wheat for another year. I think if farmers, when they miss a tid to sow Turnips, would sow Mangel Wurzel broadcast, sometimes a great advantage might be had by transplanting, as it does well in this way. Apples were a poor crop, the blossoms suffering from the late frosts. Pears set well, but did not swell, and no seeds matured in them, they evidently having suffered from the frost.

Strawberries in some places have produced heavy crops, but there has been much loss owing to the heavy rains. I placed about twenty varieties under trial, runners of 1871. The following are their characters with me.

Early Varieties.—Vicomtesse Héricart de Thury, good crop, brisk flavour, medium size. Marguerite, large, soft, flavour deficient. Princess of Wales, bad cropper, flavour good, small size. Garibaldi, good cropper but not large, good flavour, too short in the flower-stalk, much damaged by the rain, but very hardy. Brown's Wonder, heavy cropper, rather late, runners having no less than sixteen large trusses of flowers; plant in consequence of the rain did not set well; fruit medium-sized, sweet, in colour like Marguerite, shows signs of exhaustion the first year. Rivers's Eliza, good cropper, medium-sized, flavour good, flesh soft, yet it stood the rain better than any other variety.

Second Earlies.—Wonderful, large roughish berry, good flavour. It bears well the first year, but shows signs of exhaustion; fruit nearly all spoilt by the rain. President, large, good cropper and flavour, good constitution. Sir Joseph Paxton, not a single fruit destroyed by the rain; large, firm, fine form, good bearer, good constitution, flavour good, although not equal to the last-named; one of the best. Premier, good bearer and firm, but from its erect habit, with so much wet, it set badly. Admiral Dundas, good bearer, large, with a peculiar

piquant flavour; flesh tender; a good variety. Eclipse, too short in the flower-stalk, and deficient in bearing. Dr. Livingstone, a new variety, a good bearer, firm in flesh, large, all the fruit swelling to a good size; flavour good. Grown under glass, the fruit acquires a rich flavour and aroma. The plant is of good constitution, and the variety the best second or medium early.

Late Sorts.—Dr. Hogg, large, fine flavour, and a good bearer, but does not stand wet. This variety is subject to decay; when the roots are examined a fungus is found on them, but they can sometimes be renovated by a good application of manure containing many salts. It is astonishing what an amount of salt Strawberries stand. In planting this variety greater care that it receive no check is required than is necessary in the case of, perhaps, any other. Mr. Radclyffe is also a good bearer, providing the crowns be early matured; large and fine-flavoured. Cockscorn requires rich soil, it is very large, of good flavour, rough in appearance, but mildews readily. Empress Eugénie, or Black Bess, only 20 per cent. of the plants bore fruit, very large, coarse, and deficient in flavour; nearly the whole crop was destroyed by the wet. Elton, heavy cropper, large, and of fine appearance, but acid. Lucas, one of the best, taking all points into consideration; flavour excellent; a medium variety. The last I have to mention is a late variety, a seedling, but another year will be required to test it; it is the latest of any.—LANARKSHIRE BEE-KEEPER.

A SHRUB BEDDER—DIPLOPAPPUS CHRYSOPHYLLA.

ONE of the most objectionable points as regards the bedding-out system is, that when the summer occupants are removed from the beds, the latter are usually allowed to lie fallow, bare, and cheerless throughout the winter, spring, and even the first month of summer, till they can be again filled. This need not be; for, in what is in modern parlance called winter and spring gardening, there are abundant resources and material with which it is not alone quite possible, but easy, to have the flower ground looking almost as gay, and, perhaps, rather more interesting, during winter and spring than it does when decked out in its gayish summer toggery of red, white, and blue. The material usually availed of where spring gardening prevails are bulbs, hardy annuals, hardy herbaceous perennials, and variegated and otherwise curiously-coloured plants.

The value of bright-coloured or variegated-foliaged plants for the ornamentation of the flower-beds or dressed ground during the winter or spring months cannot be too strongly insisted on. Among gay-foliaged subjects of an herbaceous habit, the Golden Feather Pyrethrum is by far the most useful and effective plant we have. Some time since we devoted an article to the subject of shrub-bedding, in which it was attempted to show the advantages to be gained by a combination of the Pyrethrum with the ordinary spring bedding. On the present occasion our object is to direct the attention of our practical friends and others interested in ornamental gardening to a subject little known, and which, if taken in hand, will, in its way, be as valuable as is the Golden Feather Pyrethrum, and that is saying a good deal for it.

The plant we allude to is, like the Pyrethrum, one of the Compositæ; but, unlike it, is of a shrubby and persistent character. Our *protégé* is the Golden-leaved Diplopappus, *D. chrysophylla*. Here is a hardy, low-growing shrub, which may be popularly described as Heath-like in appearance and foliage, with the exception that the Diplopappus looks as though it had been dipped—leaves, branches, and stem—in a solution of gamboge or other gold-coloured pigment; in fact, it is the most perfectly gold-coloured plant that has ever come under our notice. It is perennial, perfectly hardy, will strike freely from cuttings, will accommodate itself, we should say, to any requirement, whether it be to form a gilt volute or finial in the fanciful scroll garden, a lowly but perennial edging or belt of gold to the flower-bed, or a veritable obelisk or pillar of gold, should fancy so choose to fashion it. Apart altogether from bedding or flower-ground considerations, grown in its natural form as a shrub it is well calculated to arrest attention, and deserving of being brought under notice.—(*Irish Farmers' Gazette*.)

CHESTNUTS.—This abundant fruit may claim a place, not equal to that of the Haricot certainly, but still an important place, amongst the substitutes for Potatoes. The roasted Chest-

nut is well known in England, but in France and other countries it is an important article of consumption. There are two kinds of Chestnuts in general use—the wild variety known in France as the *Chataigne des Bois*, and the great cultivated nut called *Marron*. The former are small, but very cheap, while the latter are large and highly nutritive. The sale of roasted Chestnuts in Paris is enormous, and is principally carried on by Savoyards, who come from their mountains for several months to roast and sell what are amusingly called by the Parisians “winter swallows.” But the Chestnut enters regularly into the French *cuisine*; it is used to make stuffing for turkey, and from it is made a *purée*, named after the great Condé, who was a famous gourmet as well as a general, which is eaten with many dishes in place of mashed Potatoes, and is much liked by those who relish a certain amount of sweetness in such preparations. Boiled Chestnuts are also eaten largely in some districts, connoisseurs adding a little butter to them when cut open, but utterly repudiating salt with them, in which we think they are decidedly wrong. In Corsica they form a large part of the food of the country, and in the south of France, and in Spain, they are largely consumed. The Chestnut certainly ranks among the most wholesome and nutritious fruits, and deserves more consideration than it receives in English houses.—(*Food Journal*.)

VIENNA INTERNATIONAL EXHIBITION.

A SLIGHT alteration should be made in the wording of the resolutions (see page 388). No. 2 should be so stated that it will be at once apparent that only one exhibition is intended to be made, and should read thus:—

“That at a later period of the year (the special date to be decided on as best to suit the interests of exhibitors who intend sending), cultivators be invited to unite in making one exhibition by sending flowering, fine-foliaged, and pot plants, also cut flowers”—exhibitors only making one show, all joining together for the one object.

We believe most excellent arrangements are in contemplation that exhibitors' interests shall be efficiently represented at Vienna. Although it is proposed that English exhibitors should not compete amongst themselves, still it is to be hoped the Vienna Government will be willing to give medals to such collections as may be considered sufficiently meritorious, which, no doubt, will be a great inducement to some.

The idea is to have just three shows—1, One permanent show of hardy plants; 2, One show of pot plants, &c.; 3, A fruit and vegetable show.

WEeping TREES.

THE Weeping Beech, or *Fagus sylvatica pendula*, is a tree of great beauty. Our specimen, 40 feet high, covers an area of 2000 square feet. Unlike many weeping trees, it grows upward and then throws its branches down in all sorts of fantastic shapes. Looking upon it from the outside it seems like a cathedral built by one of the old masters of architecture. Enter through its branches, which sweep the ground, you find yourself in a natural arbour, fit for all those pleasant things which young men and maidens enjoy but never mention to unappreciative ears. Look up, and you see a sturdy trunk with a bark like a rhinoceros's hide, and supporting limbs twisted and gnarled as if Nature were trying to show how picturesque and beautiful so crooked a thing could be.

No tree in our grounds elicits so many expressions of wonder and admiration. I would suggest one employment for the Weeping Beech which would, I think, produce very striking effects. Plant 20 feet apart in an avenue 30 feet wide, trim up the inside branches 15 or 20 feet, and allow the outside branches to sweep the ground. In this outside wall cut small Gothic openings as high as a carriage window. In process of time there will be a perfect arcade, dense on the outside, picturesque on the inside, with glimpses of scenery through the Gothic windows.

A near relative of the above is the cut-leaved or Fern-leaved Beech (*Fagus heterophylla*), with conical form, well-defined outline, and deeply cut close foliage. A fine specimen of this is well known to the frequenters of Newport, and no lawn should be without it. Another indispensable relative is the Purple Beech (*Fagus purpurea*). It has a very dark foliage, and forms a fine contrast with the Chinese Cypress; planted alternately with it on an avenue, the contrast of colour would produce a striking effect. For a lawn it is indispensable; the

new growth is exceedingly rich, and by its darkness throws into relief the lighter foliage of other trees.

The Weeping Sophora makes a perfect arbour, not reaching a height very much greater than that at which it was grafted; its branches curve gently to the ground like the ribs of an umbrella, and its graceful, delicate foliage, with a locust tint, fills up the vacant spaces. Few trees are so beautiful, and no one so unique in its form. Being of small size, it is well fitted to be near a dwelling. The Weeping Larch is another picturesque tree, and its drooping habit entirely different from that of the Sophora. It throws out several long, spreading arms, sloping gently upwards from the body, like the neck of a giraffe, and from these branches droop the lateral shoots. It is, like the Sophora, admirably adapted to rockwork, and its grotesque appearance makes it an object of note upon a lawn.

The Kilmarnock Weeping Willow is noted for its regular umbrella-like shape. Always growing down, it is well adapted for a small lawn, and forms a beautiful head when grafted sufficiently high.—(*Horticulturist*.)

WORK FOR THE WEEK.

KITCHEN GARDEN.

The heavy autumn rains probably retarded the progress of trenching and other ground operations; the first opportunity should be taken to continue such work. The garden by this time should be freed from all unnecessary and exhausted vegetable matter, and put generally in a clean and orderly state. *Asparagus*, if not already attended to, should be manured and dressed for the winter, and a portion taken up for forcing. *Globe Artichokes* must be provided with a coating of leaves; a very considerable store of the same material should be collected for lining hotbeds, Sea-kale covering, &c. *Sea-kale* intended for early forcing should be protected sufficiently to exclude frost. A sowing of *Peas* and *Beans* to afford the chance of a very early crop should be made at once, choosing the most sheltered piece of ground at command, which should also be of a light dry nature. In favoured localities it is usual to sow somewhat earlier in the month, but there is seldom any advantage in sowing before the 20th, and frequently those put in earlier are cut-up by frost, while those planted later are uninjured. I have frequently had first-rate crops from November sowings, and they certainly cause much less trouble than raising the plants under glass in spring. Use an early hardy sort. The forcing of *Sea-kale* and *Rhubarb* must now be attended to, and, provided there is a good stock of strong roots, a supply of these will be easily kept up. Where there is room to spare in the Mushroom house it forms a very suitable and convenient place for forcing them. The roots should be placed on a slight bed of warm dung, filling up the spaces between them with old tan, or the soil and manure mixed from an old Mushroom-bed, giving a good watering to wash it in amongst the roots. The bottom heat should not be allowed to exceed 70°, as too much heat is not conducive to strong growth, and except for the first crop it may be dispensed with altogether. Take advantage of wet days for making fresh *Mushroom-beds*, and clearing out those that are spent; also collect and prepare droppings for forming fresh beds by spreading them in any shed, and turning them every day until they are sufficiently dried to prevent excessive fermentation after putting-up. Clean-up all decaying leaves, &c., and stir the surface soil on dry days among growing crops of Cabbages, Spinach, &c. Let the late crops of *Celery* be closely earthed-up the first fine day, and attend to securing a late supply of *Lettuce* and *Endive*.

FRUIT GARDEN.

Prune Apple and Pear trees, particularly those of failing vigour. Spring pruning in such a case sometimes causes an unnecessary waste of sap otherwise valuable to the tree. In planting in the position occupied by other trees, remove the old earth entirely, and substitute fresh soil. Proceed with fruit-tree planting, and carefully mulch all transplanted trees.

FLOWER GARDEN.

Finer weather could not be desired for planting evergreens, &c., than we have had lately. This sort of work should be in active progress; the clearance of all decaying matters from the beds and borders should be unremittingly followed up. The remaining leaves will soon be down, when a final clearing may be made throughout the shrubberies for the season. A little care may preserve *Chrysanthemums* for some time, particularly those trained against a wall. The simple protection of a mat will turn aside the excess of frost likely to injure them. Take up and store *Marvel of Peru*, *Dahlias*, *Salvia patens*, if not already done, and finish planting bulbs and *Anemones*. A few weeks ago I adverted to the importance of getting the beds and borders intended for *Roses* into good heart, which latter point can only be arrived at by thorough trenching and turning, at the same time adding plenty of rotten dung, which should be well incorporated with the soil as the work goes on. This I consider to be the grand secret in *Rose-growing*, as without attention to this it

would be vain to expect umbrageous-growing trees or an abundance of bloom. Of all the months in the year, the present is decidedly that best suited for the removal and planting of hardy summer *Roses*. I have had something to do with the planting of the "queen of flowers" at all seasons, and the result of these operations convinces me that planting in November is attended with the fewest failures. In lifting the plants great care should be exercised to preserve as many roots as possible; avoid wrenching or straining the roots in lifting. Prune the ends of broken roots, and cut away all the suckers. Deep planting is to be deprecated; this system and the docking-out practice in lifting the trees should never obtain a place amongst the operations of practical men. Standards should be secured to stakes as soon as planted. When all this is finished, fork-up the surface as roughly as possible. Get protecting material in readiness, such as spruce boughs, fern, furze, or moss, to be applied to the more tender sorts when severe weather sets in. If possible, keep the material dry till required. To save time at another season old-established shrubberies should now be gone over and pruned. By pruning it is not meant that the shrubs should undergo the wholesale removal of branches and foliage we often witness when this operation is performed, but simply the shortening or removal of all uncouth or straggling branches, taking care to cut in such manner that the foliage will conceal the incisions made in the branches. Proceed with the planting of evergreen and deciduous trees and shrubs, it is fine weather for the operation. Devote any spare time or bad weather to prepare protecting material which will be required for delicate trees and shrubs that cannot fully withstand the severity of our winters. *Dahlias* must by this time be all out of ground: the best place to keep them in is under the stage in the greenhouse. Where this convenience is not to be had, perhaps the next best place to preserve the tubers is in a cool cellar; at all events they must be kept from damp. *Carnations* and *Picotees* will require little care beyond giving those in frames a free circulation of air during the winter months, and water as they need it. *Ranunculus* beds must be turned, and any fresh compost or soil will be better added now. *Auriculas* and *Polyanthuses* should by no means be watered too much; air and exposure is indispensable to these hardy Alpine plants. Any blooms which the plants put up must be carefully removed.

GREENHOUSE AND CONSERVATORY.

The occurrence of frosty nights will render a recourse to fires absolutely necessary, while the frequently recurring bright days will allow the advantage of a free circulation of fresh and wholesome air. Regularly remove all dead leaves, and prevent the spread of moss in any situation. Climbers should be closely tied, that they may interfere as little as possible with the fall of light on the house. Place *Mignonette*, *Primulas*, and tree *Violets* in a light, warm situation. Pot bulbs if not already done. The interior bed of fermenting material in *Gardenia* pits should be finally turned over and restored.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

The continuous rains prevented much out-door work being done. Such weather should teach the lesson that it is always undesirable in doing work to make work. We have seen work being done in mud and filth, while it would have been true economy to have paid the men for not doing anything. We would not keep men out of doors in wet weather, and in-doors in fine. Thoughtfulness in these matters is combined with true economy.

FRUIT DEPARTMENT.

Planting and Transplanting.—With so much wet, planting had better be deferred. Stations and mounds may be prepared whilst it is dry. For all transplanting, preparations should be made, as when a few dry days come the work may be proceeded with; and there will be this great advantage, that every rootlet will be filled with liquid. We have never planted with better effect than when we placed the roots of trees and shrubs without balls some fifteen minutes in water. That was far better than deluging the soil with water after planting. People are slow to comprehend this simple fact, that a deluged soil is a cold soil, and therefore so far militates against fresh rootlets. In many cases plants shifted from a smaller to a larger pot would do better if they were well watered before shifting and had little water afterwards until the roots began to occupy the fresh soil. It often occurs that dipping the ball of a plant in a pail or tub of water is a greater kindness than soaking and deluging a fresh-potted plant.

ORNAMENTAL DEPARTMENT.

Removing Large Trees.—In connection with this subject we may state that we removed a lot of large trees, chiefly *Horse Chestnuts*, last spring, the boles ranging up to 15 inches in diameter. As the weather in summer was rather moist, except in laying out the roots, packing these well, and securing the trees properly, no other attention was given, and they had no watering except what the rains afforded. Of the lot we are only a little dubious about one, but we think even that will

come round next year. All the rest have made fresh shoots with fine buds. Singularly enough, the one tree that does not look so flourishing as the others was one of the largest, and we thinned the head considerably, so as to proportion it to the crushed and cut-off roots. The majority of the most promising trees now had not a branch or twig taken away. We do not like cutting-back large trees when transplanting them. We prefer thinning-out the twigs and branches, so that the points may remain much the same as before, and less strain be put on the necessarily broken roots.

For years we have felt that, in ordinarily favourable circumstances, much even of this thinning-out was a mistake. Being pressed for time, we did not thin the heads of these trees a little as we intended doing, resolving to cut out a few twigs with a ladder afterwards. Now, we are glad we did nothing of the sort, as before the end of next summer we presume most of the trees will be so much at home as to show no signs of transplanting.

In their case we made no previous preparation, but took up carefully, tracing-out and preserving the roots; we should have succeeded even better, only the two-wheeled large timber-gig we used ought to have had 2 or 3 feet more between the wheels, so as to afford more room for the extending roots. We moved these large trees in March, and besides the careful raising, packing, and staking, there was no extraordinary trouble involved. Several times when we thought of watering them a heavy rain came and saved us all the labour. If we could have moved them, say in the first days of a November like this, we should have counted on more success still, as every fibre saved would have been surcharged with moisture.

As regards moving such large trees we may first observe, as the soil was poorer than that in which the trees were growing, we gave each tree about a cartload of good soil that came from our potting benches, &c. In the next place we secured every tree by three poles—in fact young Larch trees thinned out, and nothing could be better—so that the strongest wind could not break the finest new fibres of the roots. We made no holes for these poles, and made no points to them. We just took them as they were, with the butt or big end downwards, and we placed each of the rough ends a foot or so beneath the surface, and some 4 or 6 feet from the tree, the base abutting against the firm soil, and the small end of each brought to the stem of the tree at 6 to 9 feet from the ground. No driving of poles is required. No plan we know is more simple or more effectual. Let the wind roar and rage, the tree and the three supports must all go together before the tree or its roots can suffer. In this case the effectiveness depends on the simplicity. When the ground is very loose a piece of board or a brick will prevent the base of the supporters moving. Be it observed that by this simple mode we need no pointing of stakes, no malleting, &c. The base of the three stakes abutting against the firm soil, and the heads being brought to the stem of the tree, the whole arrangement makes the tree like a strong tower that cannot be moved.

After such rains, whenever the weather clears up we shall have a fine season for transplanting. It is of little use entering into the economy of the transplanting. We believe that it would be cheapest some thirty years hence to turn out good nursery plants now; but then for present effect it is often desirable to transplant trees of from twenty to thirty or more years' growth, and if well done an effect is often thus produced at once instead of waiting years for it.

We have in our experience tried all modes, preparing trees and shrubs the season before; but after all we have rarely succeeded better than when we took the plants up at once, tracing out the roots and packing them nicely. In transplanting large trees and shrubs now, much of the watercart deluging the soil is a mistake. If the weather should be dry, damp and water the roots before planting, otherwise the soil will generally be moist enough. Bear in mind that the wetter you make the soil the colder it will be, and the less the encouragement given to fresh rooting.—R. F.

TRADE CATALOGUES RECEIVED.

H. Cannell, Station Road, Woolwich, S.E.—*Catalogue of Florists' Flowers.*

Robertson & Galloway, 157, Ingram Street, Glasgow, and Helensburgh.—*Catalogue of Roses, Rhododendrons, Gladioli, Liliums, &c.*

F. & A. Dickson & Sons, 106, Eastgate Street, and Upton Nurseries, Chester.—*Catalogue of Forest Trees, Hardy Ornamental Trees and Shrubs, &c.*

TO CORRESPONDENTS.

N.B.—Many questions must remain unanswered until next week.

HYACINTH ROOTS IN GLASSES DESTROYED (*A Winter Gardener*).—We cannot account for the hartsorn destroying the roots. It is not unlikely that it may have been the cause if there was no leaf-growth. We only recom-

mend others to practise as we do ourselves; and we not only employ spirits of hartsorn when the plants are growing, but every time the water is changed—two drops to a large glass, or one drop if small, dropping it on a piece of charcoal. Are you sure it was spirits of hartsorn?

COMPOST FOR LILIUM ATRATUM AND L. SPECIOSUM (*An Old Subscriber*).—Two parts fibrous loam light rather than heavy, one part sandy peat, half a part old cow dung or well-rotted manure, one part leaf soil, and a sixth of silver sand, and the same of charcoal. Chop up the loam and peat moderately small, and add the other ingredients, thoroughly mixing. Drain the pots efficiently. The sooner they are potted after this the better. Both Liliums succeed in the same compost.

GERANIUMS FOR CUT BLOOMS (*Reader*).—For producing good trusses of bloom for cutting we consider young plants preferable to old ones cut back. The young plants afford the finest trusses and flower, the old plants produce them more freely and earlier. The aim being to secure large trusses and blooms, it is better to grow the plants to flower when required, allow them to bloom themselves out, and have others to supply their place; but the old plants, after a rest of six or eight weeks, if cut down and started again, would have flowers little inferior to those of young plants.

WEIGHTS OF APPLES AND PEARS (*H. W. R.*).—The newspaper you quote must have omitted to state the fact that the weights were not those of single specimens but of the dish of six. If you refer to our number of November 7th you will find the weights of the heaviest dishes and the kinds.

STOVE FOR GREENHOUSE (*J. H. Y.*).—There is no stove nor fuel that can be employed among plants that will not injure them, unless the stove has a chimney of some sort to carry away into the open air the smoke or gases caused by combustion. (*E. G. G.*).—We do not know the construction, therefore cannot say if it would get red hot. It must be very ineffective if it would not heat so small a greenhouse. As it has a flue it would do no harm to the plants unless these were too near to it.

PRESERVING THE COLOUR OF LEAVES.—“*Folium*” wishes to know the best way to preserve leaves which have at this time of year such beautiful tints of red, yellow, and green. Our correspondent has varnished some, but the colour is entirely gone, and the leaves are a dead brown.

FUNKIAS (*W. Crisp*).—You can obtain plants through any nurseryman. Seeds you will have to save for yourself.

ROSES FOR S.W. AND W. WALLS (*A Constant Reader, Bradford*).—*Three Dark*.—Charles Lefebvre, Sénateur Vaisse, Général Jacqueminot. *Three Light*.—Baroness Rothschild, Boule de Neige, Acidalie. *Three Medium*.—John Hopper, Mad. Clémence Joigneux, Mad. Charles Craplet. All the above will cover walls with proper care and attention, though none of them is strictly a climber. The best climbers are Gloire de Dijon, Marechal Niel, and Climbing Devonensis. The first-named succeeds in almost any situation, the two latter require a warmer aspect. None of the climbers proper, as the Bour-saults and others, have well-formed flowers. Some of the Noisettes, as La Biche, Lamarque, and especially Céline Forestier—the first two light, the second yellow—are worth growing; they are not sufficiently hardy, however, except in the south, for trelliswork.

HOT-WATER PIPES (*A Young Gardener*).—Your case is quite an exceptional one. In general the highest pipe is the flow. In two or three cases we have had it different for particular purposes. The return to the boiler was the same. In your case we would stop the flow, but in such an arrangement you so far lose power. If you gave us an outline of the course of the pipes we would advise you better. In several cases we have made the lower pipe the flow, but it is neither natural nor economical, and the expense was greater.

PLANTS IN SMALL CONSERVATORY (*W. H. B.*).—For a small house we think that the directions in our “Window Gardening” would just suit you. If you tell us the size of the place we shall be glad to advise you. In the meantime you will find there pretty well all you want, and it can be had from our office per post for 10d.

APPLE AND PEAR STOCKS (*Young Gardener*).—In your letter you write “Queen,” we presume you mean Quince. The Quince is the stock used to graft the Pear upon; it causes the tree to assume a dwarf character, and the roots do not penetrate the ground deeply like those of the Pear, but spread out near the surface. This stock is readily propagated by cuttings; plant them in the present or next month in the open ground. The French Paradise stock is that which you should grow to graft the Apple upon; it is also propagated by layers or cuttings like the Quince, and has a similar effect upon the Apple to that the Quince has upon the Pear. You may either bud or graft. Budding is performed in August, and grafting in spring just after the buds break. The grafts should be cut from the trees some time before being used; they can be laid in the ground until the stocks are ready. Bud or graft close to the surface of the ground. The Crab stock is simply the wild Apple, and is raised from pips; it is the preferable stock when the trees are required for orchard planting, or wherever they are intended to grow of a large size.

CARBOLIC ACID TO PAINT FRUIT TREES (*J. D. B.*).—We think the mixture of lime, sulphur, and soft soap would destroy the larvæ of any insects on your trees. We do not know what effect mixing a portion of carbolic acid with it would have, or whether it would be injurious to the buds; we do not think it would injure the old wood. Now is the best time to apply it. Could you not try it to a limited extent and report to us?

POMEGRANATE TREATMENT (*A Lady in Cheshire*).—You do not say what has been the treatment of your plant, nor whether it is in a pot or planted out. We presume it is in a pot, in which case it should be grown in a greenhouse, or, better still, ainery which started about March, assigning it a light and airy position, and potting in spring, when it begins to grow, in a compost of light rich loam, with a little sandy peat and leaf soil, giving only a moderate shift, and removing most of the old soil. The flowering depends on the ripening of the wood, therefore the plant should have full exposure to light after a good growth has been made, with no more water than that required to keep the leaves from falling prematurely. In winter keep it dry, and prune in spring; leave a good number of the twigs on which the flowers are for the most part produced, and shorten the long shoots to the firm wood. A temperature of 40° to 45° is suitable. If yours is the double-flowering variety, it should be grafted, then it flowers more freely than on its own roots.

HERBACEOUS PLANTS FROM SEED (*Idem*).—Alyssum saxatile compactum, Anemones, Antirrhinum, Aquilegia caryophyllodes, A. californica, and A. glandulosa; Arabis alpina, Aubrietia græca, A. purpurea, Alpine Auriculas, Campanula carpatia, Carnations, Centaureidrum Drummondii, Delphinium formosum, D. grandiflorum celestinum, Digitalis, Geum coccineum, French Honeysuckle, Lathyrus latifolius, Lupinus polyphyllus, Lychnis

chalcidonica, *L. Haageana hybrida*, *Myosotis azorica*, *M. sylvatica*, *Pansies*, *Pentstemons*, *Phlox decussata* in variety, *Polyanthuses*, *Potentillas*, *Pyrethrums*, *Silene Schaffa*, *Picotees*, *Pinks*, *Sweet Williams*, and *Wallflowers*. Some of these are sweet-scented. You may have *Gloire de Dijon* Rose in the centre of the flower-bed. The plants will not interfere with its roots, only in digging be careful not to go so deep as to injure them.

LILIUM ATRATUM SEED SOWING (R. B. P.).—Sow the seed as soon as ripe in rather deep pans, draining well, and filling to within half an inch of the rim with the following compost chopped up rather small—viz., two parts fibrous loam, one part leaf soil, one part sandy peat, one-sixth silver sand, and make level with the same kind of soil sifted fine. Scatter the seed evenly, and cover about a quarter of an inch deep with fine soil. Set the pans in a greenhouse, and in March you may place them in a gentle hotbed, but we consider the plants are best raised without more heat than that of a greenhouse. Keep moist through the winter, but not very wet, moister after March.

EXHIBITOR QUESTIONING THE JUDGE (Clifton Suspension Bridge).—Anyone can be a well-conducted winner; but it is more difficult to be a well-conducted loser, and one of the worst instances of his misconduct is to annoy the Judge with remonstrant queries.

CELINE FORESTIER ROSE (R. T. F.).—“*Céline Forestier*, called also *Liesis*, was raised by M. André Leroy, and sent out about 1858. The Rose might by some one have been called after Lady S. Bradford. In that case the raiser mistook *Seline* or *Selina* for *Céline* or *Selena*. If meant as a compliment to Lady Bradford, why was it also called *Liesis*? I do not in the last twenty years remember any Rose with the prefix of *Selina*. It is an admirable Rose, and whilst good for walls, makes the noblest standards.”—W. F. RADCLIFFE.”

INSECTS (A Subscriber, Priory).—The caterpillars which have attacked your young *Geranium* plants in such numbers are those of one of the moths of the family *Noctuidæ*, which are not easily determined in their caterpillar condition. We believe that yours will prove to be those of *Polia dysodea*, the *Rannunculus* moth. Their attack on your *Geraniums* is quite an exceptional case. You cannot do better than hunt for them on the plants after dark.—I. O. W.

NAMES OF FRUITS (Centurion).—1, Van Mons Leon Leclerc; 2, Dr. Capron; 3, Princess Charlotte; 4, It may be *Duchesse d'Angoulême* from a late bloom; 5, Like *Reinette du Canada*, but small; 6, Lewis' Incomparable; 7, St. Michel Archange. Your Northern Spy is evidently growing too vigorously. Transplant it, and put it on a west wall. (R. C. Catlin).—The Apple is *Yellow Ingestrie*; No. 1, Pear *Beurré Bosc*; 2, *Soldat Espereu*. (J. N.).—1, *Worthless*; 2, *Bergamotte Cadette*; 3, *Knights' Monarch*. (P. B.).—1, *Worthless*; 2, *Princess Charlotte*; 3, *Retour de Rome*; 5, *Jean de Witte*; 6, *Madame Elize*.

NAMES OF PLANTS (J. Hibbert).—The name of the Fungus is *Clavaria stricta*, said to be rare. (*Uplift Green*).—We cannot name plants from leaves, nor specimens that are not numbered.

POULTRY, BEE, AND PIGEON CHRONICLE.

THE PACKING AND UNPACKING OF POULTRY AT SHOWS.

ANY breeder of poultry attending a poultry show, and being in the place of exhibition, as I have been on several occasions during the past autumn, at the close of the show, when the birds were being repacked, would have witnessed a scene which few can imagine, far less describe. There is generally a great hurry to get the birds off to the station; the one or two men who have charge of them at the show, and who know how to handle birds, being anxious to send them off, call in three or four “helps,” and do so regardless of consequences. Legs, heads, wings, tails, and feathers are seized, wrenched, pulled, and twisted; it matters not what comes first, so long as the poor bird is got out of the pen and pitched into the hamper. Expedition in returning the birds is very essential, but not at such fearful risks, and the wonder is that birds are ever fit to exhibit twice. Generally speaking, secretaries of shows know little of the trouble, care, and anxiety of breeding birds fit to take a prize, consequently look upon the valuable stock committed to their care with far different ideas to the owner and breeder.

Another serious matter I have noticed at shows—that is, permitting persons to take sticks, umbrellas, &c., into an exhibition. Well may a poor bird taking a prize exclaim, if he could, “Save me from my friends,” and we may also say (I think) foes too. I have noticed that every man who has a stick is sure to use it in poking up a prize bird, not simply because he wants to see a good point in the bird, but for the sake of using it, and the greatest yokel, not capable of telling a *Cochin* from a *Cuckoo*, is sure to use a stick in a poultry show; consequently by such usage how rarely a bird is seen in a show-pan to advantage! Another more grave matter arises through permitting sticks to be taken into a show—it affords badly-disposed persons (such as Mr. Hewitt alludes to in Wright's “*Book of Poultry*”) an opportunity of giving a bird a blow or an injury to feathers that may prevent his ever again being fit to show. This being so easily done and so easily prevented, henceforward no stick, umbrella, &c., should be permitted in any poultry exhibition whatever. They can be easily taken charge of at the door, as at a picture exhibition, and returned when the owner leaves; and I fully believe that every honest and right-minded exhibitor will endorse the views expressed by—EDWARD TUDMAN.

BIRMINGHAM POULTRY SHOW.—A comparison of the entries made for this popular Exhibition, which opens on the last day

of the present month, shows that the liberal prizes and arrangements have enabled Birmingham to well hold its own this year. No less than 600 feet in length of new galleries have been added since the last Show, the object being to place the Pigeons and Bantams in more immediate connection with the poultry department. Two new poultry offices have been erected, as the sales of birds, now approaching to £2000 during the Show, rendered increased accommodation in this department an absolute necessity.

DEALERS AND SHOWS.

MR. WRIGHT appears to assume that all persons who make a profit by the sale of their poultry are to all intents and purposes dealers; now, this opinion I am not prepared to endorse. I am a poultry fancier in a small way, and the sole object I have in view is amusement and recreation; at the same time I am not insensible to the desirability of making my hobby “pay its candle,” and would this latter consideration constitute me a dealer? I think not. Mr. Wright commences with the quotation, “that a man who buys and sells for gain is a dealer,” but I think he scarcely sticks to his text, as no further mention is made in his succeeding remarks of the buying and selling transactions, but of breeding; the latter term appears to be substituted for the former, which in my opinion makes all the difference. I am aware that it would be very difficult to draw a hard-and-fast line, but I think it will be generally admitted that one who buys and sells for gain is without doubt a dealer; while the term will not apply with such force to those who happen to breed their birds.

With regard to Mr. Wright's second paragraph, I think his conclusions are equally open to criticism: as if dealers, and some others who might be termed professional exhibitors, were by some means handicapped, the chances would be greatly in favour of amateurs winning, and the odds being thus in their favour, a ready sale would be effected of all high-class birds; the purchasers knowing that the professional being out of court, the money would not be entirely thrown away. Not that I advocate the system of winning with purchased birds, for in such cases it is the longest purse and not the best manager that wins. Of course I am now speaking of a system, for it will sometimes happen that an amateur will win with a bird that had been previously purchased as a stock bird, but this will not affect the general principle.

In conclusion, I think that the establishment of county shows would effectually meet the case, leaving, say, eight or ten of the larger shows open, to give those who feel inclined an opportunity of measuring their strength, and even in these I think the limited classes will be found an admirable institution. There are scores of amateurs who, like myself, care for no more than local fame, and if they did aspire to the highest honours—such as cups at the Crystal Palace, Birmingham, and elsewhere, the professional fraternity would in the majority of cases effectually extinguish their chance, and consequently damp their ardour; and I think everyone will admit that these amateurs deserve all the encouragement that can be afforded them, as from their great and rapidly-increasing numbers, and I think I may say from their generally high character, they must be looked upon as the backbone of the fancy.

As I intimated before, the establishment of county shows would go far to place all such exhibitors on a common level, and the committees of shows would, I think, find such a plan greatly increase the entries and subscriptions; and leaving a fair proportion of the larger shows open, would enable the poultry world to see who were the real lions of the fancy, or, at least, who were the possessors of the best birds of the year.

While I am on the subject, I will take the opportunity of expressing my regret that the committee of what bids fair to be a flourishing show in my own county (Kent) have deemed it advisable to throw their show open to general competition; this, in my opinion, is a radical mistake, and playing into the hands of the very parties who are the cause of this discussion being raised.—W. J., *Shepherdswell*.

On witnessing the last Show at Norwich, I then stated to Mr. Groom, the Manager, my conviction that a show for selling classes only should in future be held, as it was evidently called for by the buying public, from the fact that out of the three selling classes upwards of sixty pens were sold, whereas not a single purchaser appeared in any of the open classes. These facts, occurring in districts so famous for the breed of poultry and Pigeons as Norfolk and Suffolk, must be conclusive, and Mr. Groom said that was entirely his opinion.

Mr. Wright's advocacy of this subject prevented my troubling you at the time with my views, and I have only to add that on meeting Mr. Groom at Ipswich we discussed the matter thoroughly, and agreed that so far from the plan acting against the interests of dealers, it would give them more scope, and at the same time give amateurs a fair chance of competing with them, and of allowing buyers generally to make purchases, which with the system of open classes was rendered practically

impossible on account of the prohibitory prices upon the birds.
—A. GOODMAN.

I SEE no reason why dealers should not be encouraged to exhibit. It is true they stand the best chance of winning point cups, owing to their having a knowledge of a greater variety of breeds than mere amateurs, who, as a rule, cultivate but one. It is acknowledged that amateurs show for honour, and also the more severe the competition the greater the honour attached to the winner. If an amateur has what he considers first-class birds, will he not value them a great deal more if he succeed in beating a large entry made by some extensive and well-known dealer? The dealer having made the large entry because he thought his birds would "clear the boards." Now, if more honour is attributed to the one who can win in a numerous and good company, and point cups bring out the resources of the dealers, I ask, What more can an amateur desire? There are some calling themselves amateurs who show for the actual money gain, and I have no doubt it does not please them to have to compete against some of the best birds of the season, as then their chance of winning would be more remote, but what of the honour? But the "money-gain" amateurs have nothing to do with that.

Shows, according to my idea, should be strictly a competition as to who can produce the best birds; and the more general a show is, or, in other words, the more it represents the whole country, the better, as the amateur's prize (honour) is so very much increased that it makes shows worth while to real amateurs. If it were known that all the large exhibitors were going to send specimens to a certain show, any real amateur having good stock would think it worth while to try and beat the large exhibitors, even if the cost of entry fees, &c., amounted to a considerable sum; hence the great number exhibiting at such a show as Birmingham, where, if money gain were the object, the chance of winning would not pay the cost of entry. If point cups are offered, it immediately raises the show to a much higher standard on account of the increased competition, as if any dealer makes an entry with the idea of trying to win the cup, it can be taken as a good sign that the stock sent will be good, for no dealer would throw away his reputation and money by sending inferior birds. I say by all means give point cups, and by so doing first augment the funds—a subject always to be considered; secondly, make it a show worthy the attention of the general public by having something worth looking at; and thirdly, increase the amateur's prize (honour) by severe competition. To win a prize is something to try for, but to win a first prize at a show where the majority are experienced exhibitors and dealers is a step higher up the ladder.

I will put it in another light. At some shows, owing to a small prize offered, say one guinea, as first, the entries would be few, the show perhaps almost deserve the name of local, and, as an exhibition of poultry, would hardly be worth looking at. We will now suppose the prize to be a ten-guinea cup. Immediately entries come in from all parts, and the prize, apart from the actual tenfold value of the money, is increased to gigantic proportions, and most likely is considered the prize of the season. If amateurs grumble because they cannot win when exhibiting against dealers, and on that account want to stop the latter from showing, I consider they should be classed with the dealer, as their aim is precisely the same—viz., money gain, not honour.—REDLEAF.

[We have received several other communications on the subject, but we think that it has been sufficiently discussed, and may now be left to the discretion of the show committees.—EDS.]

THE CRYSTAL PALACE POULTRY AND PIGEON SHOW.

THIS Show, known by catalogue as the "Great London Poultry and Pigeon Exhibition," was opened on Tuesday the 19th at noon, about which time I entered the Palace. Now, had its builder been told that the whole length of the nave of that beautiful and spacious building would be filled with cocks and hens he would have denied the possibility; yet such is now the case. Actually there is a double row of pens in the centre, a row also on either side of the nave; more than that, the whole of the transept, reaching up to the theatre stage, is filled entirely with Pigeons; and, in addition, under the great organ are a dozen pens of four pairs of Pigeons. In all there are 3217 pens of poultry, Pigeons, and Rabbits. Now it is not too much to say that every other show formerly held anywhere in the United Kingdom is put in the shade; and aspiring as is the title "Great London Poultry Show," the name should be enlarged to the "Great National Show." It is plainly impossible to give a full detail this week; there must be greater time given for mastering details, and more time and space for printing. Thus, then, I can give only a general view, subjoining the prize list, and next week I hope to fully narrate what is indeed well worthy the narrating.

POULTRY.

First in regard to the Poultry. The Dorking classes may be pronounced good. Our old friends the *Cochins*, whom many people imagine are by-gones, and they suppose were all eaten-up by some very strong-jawed people at the end of the mania, are numerous and very good indeed; and, mark it, the good old-fashioned Buffs are especially good. *Spanish* are middling, *French* not remarkable. *Ducks*, good; and *Geese* and *Turkeys*—nice reminders of Christmas, particularly if they had no bills!—are remarkably good. The *Brahmas*, Dark and Light, are good; the Dark cocks the least good, together with the Dark cockerels, while the pullets are the best ever judged. The Light *Brahmas* have very greatly improved, indeed they have improved more than any variety exhibited. The *Hamburgh* classes are good, and the prize birds excellent; the Silver-spangled clear in markings, and the right type of bird. The same may be said of the Golden-spangled; indeed, the *Hamburgh* classes were hard judging, so almost alike in merit were so many pens. The *Polands*, too, are grand birds. Our little friends the *Bantams* muster strongly. The Blacks are particularly good, not so the Whites nor the Any other distinct variety class; while the *Sebrights* are pronounced to be up to the mark, and beyond what they generally are. Among the *Selling* class are a lot of excellent birds. Concerning other classes more next week.

THE PIGEONS.

Bending to the right I enter the quiet transept, where the Pigeons, suitable tenants of the Palace, as suitable as the flowers themselves, are ranged. Ardent fanciers, a somewhat different style of man to the poultry fancier, quite as clever, and yet (it may be fancy), somewhat more gentle, there they are admiring and discussing, anxiously waiting—that is, the exhibitors—for the man with the cards to know their fate—whether cup or no cup, first prize, or second, or third, or those disappointing very highly commendeds, and highly commendeds, and commendeds, or, worse far, no card at all; pens minus pasteboard, and the prized bird of the home circle quite unnoticed. Well, in this world some must lose, all cannot win—heigho!—but in this world only.

Pouters.—Blue-pied cocks, a good class; Black-pied, fair; Yellows, too pale for the most part; Whites, very good. The Black-pied hens are the worst class—a pretty little lot of pretty pigmies. Black *Carrier* cocks excellent, and commendations strewn thickly as they deserved. Some fear has been expressed that the *Carrier* fancy is declining, but the numbers and quality shown in the Palace show that fear need not be felt.

The *Dragoons* are many too *Carrier*-like, but among the charmers are Mr. Betty's Yellows. The high-class *Tumblers* would satisfy both kinds of fanciers, the head-beak men and the colour men. The *Jacobins* are a very good and strong class; and "A rare lot of good *Fans*!" exclaimed a Fan-fancier near me—and the words were true. *Trumpeters* few, but some very splendid. *Turbits* are an extraordinarily good class; *Magpies* few, but the first-prize Yellows (Mr. P. H. Jones) simply lovely; *Runts*, more numerous than usual, and in addition to Blues and Silvers there was a grand Yellow bird.

Antwerps, the production of the French and German war—at least, that gave the impetus to their breeding—are most numerous, and many such as they should be—powerful, spirited, determined-looking birds, who each seemed to say, Let me out and won't I go home, wherever or however distant that home may be!

The Any other variety class, though small, made up in excellence. The large *Selling* class contained some excellent birds for a fancier to start with, or to strengthen his studs from.

The best collection of four pairs should, to my mind, be four pairs of different varieties; the difficulty would be greater and the look more attractive.

Such is a very brief and faint outline of this wonderful Show, the grandest there ever was, and, adds a sad-hearted prophet, "or ever will be." But *absit omen*. Why should there not be many others just as good, or even better? for to stand still is to go back in a world of progress, and actually to go back is what no true fancier will permit.—WILTSHIRE RECTOR.

The following is the prize list:—

DORKINGS (Coloured).—Cock.—1, J. Martin. 2, Viscount Turnour. 3, J. White. 4, H. J. Wilson. 5, R. W. Beachey.
DORKINGS (Coloured).—Hen.—1, Cup, Rev. J. G. A. Baker. 2, R. W. Beachey. 3, M. Putney. 4, Countess of Dartmouth; F. F. Fowler; F. Parlett. 5, J. Watts; Mrs. G. Meek; J. Martin; Henry Lingwood.
DORKINGS (Coloured).—Cockerel.—1, Cup, and 2, Mrs. Arkwright. 3, J. J. Walker. 4, J. Frost. 5, J. Webb; F. Parlett. 6, N. Russell; E. Barker; T. E. Kell; Mrs. E. Wheatley (2); Mrs. Arkwright.
DORKINGS (Coloured).—Pullet.—1, Mrs. Arkwright. 2, J. Webb. 3, W. W. Rutledge. 4, F. Parlett. 5, E. Burton; F. Parlett; W. W. Rutledge; T. E. Kell; Mrs. E. Wheatley (2). 6, F. F. Fowler; J. Clift; R. W. Beachey; Henry Lingwood.
DORKINGS (Silver-Grey).—Cock.—1, Rev. T. E. Cato. 2, W. H. Denison. 3, Wren & Page.
DORKINGS (Silver-Grey).—Hen.—1, Cup, and 2, O. E. Cresswell. 2, R. D. Holt. 3, J. D. Simmonds.
DORKINGS (Silver-Grey).—Cockerel.—1, F. Cheesman. 2, R. D. Holt. 3, J. D. Simmonds.
DORKINGS (Silver-Grey).—Pullet.—1, P. H. Jones. 2, E. Fearon. 3, Countess of Dartmouth. 4, R. D. Holt; W. W. Rutledge. 5, F. Cheesman; Capt. Downman.

POTTERS (Any colour).—Cockerels.—1 and Cup, B. Fulton. 2 and 3, W. R. Rose. c, A. Heath; Rev. C. C. Ewbank.

POTTERS (Blue-pied).—Hens.—1 and Cup, R. Fulton. 2 and 3, Rev. C. C. Ewbank.

POTTERS (Black-pied).—Hens.—1, C. Cant. 2, Rev. C. C. Ewbank. 3, G. J. Taylor.

POTTERS (Red or Yellow-pied).—Hens.—1 and 3, R. Fulton. 2, N. Hill.

POTTERS (White).—Hens.—1, R. Fulton. 2, W. R. Rose. 3, Mrs. Ladd. c.—Ladd.

POTTERS (Any colour or markings).—Hens.—1 and 2, W. Volckman. 3, R. Fulton.

POTTERS (Any colour).—Young Hens.—1, W. Stiles. 2, Mrs. Ladd. 3, Rev. C. C. Ewbank.

POTTERS (Any age or colour).—Pair.—1, P. H. Jones. 2, W. Rose. 3, H. Pratt.

POTTERS (Pied or Austrian).—1, 2, and Cup, W. B. Tegetmeier. 3, H. Beldon. c, J. H. Esden, jun.; A. A. Vander Meersch.

CARRIERS (Black).—Single.—1, 2, and Cup, R. Fulton. 3, H. Heritage. vhc, R. Fulton; G. Hodgkinson; Capt. H. Heaton. hc, W. Quickfall.

CARRIERS (Black).—Hens.—1, 3, and Cup, R. Fulton. 2, F. Wiltshire. vhc, Capt. H. Heaton; H. M. Maynard; F. Wiltshire.

CARRIERS (Dun).—Cocks.—1, C. E. Duckworth. 2 and 3, R. Fulton. vhc, Capt. H. Heaton; E. Burton. hc, Capt. H. Heaton; W. Baldwin.

CARRIERS (Dun).—Hens.—1, Capt. H. Heaton. 2, J. C. Ord. 3, F. Wiltshire. vhc, J. C. Ord; W. Massey; F. Wiltshire. hc, W. B. Ford; Capt. H. Heaton; W. Massey; H. M. Maynard.

CARRIERS (Any other colour).—Cocks.—1, J. E. Duckworth. 2, G. Hodgkinson. 3, H. Heritage. vhc, W. B. Ford; W. G. Hammock. hc, W. B. Tegetmeier.

CARRIERS (Any other colour).—Hens.—1, C. E. Duckworth. 2, W. G. Hammock. 3, W. E. Nalder. vhc, W. B. Ford. hc, J. C. Ord.

CARRIERS (Black).—Single.—1, W. Massey. 2, 3, and 4, W. Siddons. vhc, C. E. Duckworth; W. Massey; F. Wiltshire. hc, W. Siddons; W. E. Nalder.

CARRIERS (Dun).—Single.—1, Cup, and 2, F. Wiltshire. 3, W. E. Nalder. 4 and vhc, Capt. H. Heaton.

CARRIERS (Any other colour).—Single.—1, W. B. Ford. 2, W. E. Nalder. 3 and 4, W. Siddons.

CARRIERS (Any other colour).—Pair.—1, R. Fulton. 2, G. H. Wherland. 3, J. Watts. vhc, W. B. Tegetmeier; R. Fulton. hc, G. H. Wherland; J. E. Mason; W. B. Tegetmeier; J. C. Ord; P. H. Jones.

DRAGONS (Blue).—Single.—1 and Cup, G. South. 2, F. Graham. 3, W. B. Tegetmeier. hc, W. B. Tegetmeier; R. Fulton; B. Carlisle; W. Gibson.

DRAGONS (Silver).—Single.—1, Cup, and hc, F. Graham. 2, W. W. Gibson. 3, G. South. vhc, W. B. Tegetmeier; F. Graham; G. South.

DRAGONS (Red or Yellow).—Single.—1, Cup, and 3, S. C. Betty. 2, F. Graham. vhc, S. C. Betty (5); G. South. hc, S. C. Betty (2); R. Fulton; F. Graham (3). c, F. Graham.

DRAGONS (Any other colour).—Single.—1, Cup, and 2, W. Bishop. 3, H. J. Dwelly. vhc, R. W. Richardson (2); W. Bishop; J. G. Dunn; F. Graham (2). hc, G. H. Gregory; W. H. Mitchell.

TUMBLERS (Almond).—Cock.—1, R. Fulton. 2, J. Ford. 3, W. R. & H. O. Blenkinsop.

TUMBLERS (Almond).—Hen.—1 and 2, J. Ford. 3, W. R. & H. O. Blenkinsop. hc, R. Fulton. c, J. Baker.

TUMBLERS (Any other variety).—Cock.—1, H. Heritage. 2, W. R. & H. O. Blenkinsop. 3, H. Adams. hc, G. J. Taylor; R. Cant.

TUMBLERS (Any other variety).—Hen.—1, W. R. & H. O. Blenkinsop. 2, H. Heritage. 3, H. Adams. hc, R. Fulton.

BARBS (Any colour).—Cock.—1, H. M. Maynard. 2, J. Firth. 3, P. H. Jones. vhc, R. Fulton. hc, J. Lister; R. Wade.

BARBS (Any colour).—Hen.—1, J. Firth. 2, R. Fulton. 3, H. M. Maynard. hc, J. Firth; P. H. Jones.

BARBS (Any colour).—1 and 2, W. Massey. 3, J. Firth. hc, J. Lister; H. M. Maynard. F. Smith; c, J. Firth; P. H. Jones.

JACOBS (Red or Yellow).—Single.—1 and Cup, J. Hawley. 2, A. A. Vander Meersch. 3, R. Fulton. hc, R. Fulton; R. W. Smith; J. Thompson. c, T. W. Swallow; R. Fulton; T. Rule.

JACOBS (Any other colour).—Single.—1, R. Fulton. 2 and 3, J. Thompson. hc, R. Fulton; H. F. Nalder.

FANTAILS (White).—Single.—1, H. Simpson. 2, Rev. W. Serjeantson. 3, T. Rule. hc, J. F. Liversidge (2); J. E. Spence. c, J. F. Liversidge; A. A. Vander Meersch.

FANTAILS (Any other colour).—Single.—1, 2, and 3, H. Yardley. hc, J. Baker. c, P. H. Jones.

NUNS.—Single.—1 and 3, W. Croft. 2, W. E. Easton. c, Rev. A. G. Brooke.

TRUMPETERS (Black).—Single.—1, W. Gamble. 2, P. H. Jones.

TRUMPETERS (Any other colour).—Single.—1 and 2, R. Fulton. 3, J. Baker.

OWLS (English).—Single.—1, H. Taylor. 2, W. Gamon. 3, J. Baker. hc, R. Mangall. c, J. Thresh. c, J. Hawley; J. Chadwick; T. W. Townsend.

OWLS (Foreign).—Single.—1 and Cup, J. Baker. 2 and 3, J. Fielding. jun. vhc, W. R. & H. O. Blenkinsop. hc, R. Fulton; G. J. Taylor; W. R. & H. O. Blenkinsop. c, J. Bowes; H. A. Saddington.

TURBITS (Blue and Silver).—Single.—1, L. H. Ricketts. 2, R. Fulton. 3, P. H. Jones. hc, A. A. Vander Meersch; P. H. Jones.

TURBITS (Any other colour).—Single.—1, R. Fulton. 2, A. A. Vander Meersch. 3, W. Croft. hc, W. E. Easton; E. T. Dew; W. Croft.

MAGPIES.—Single.—1, P. H. Jones. 2, E. Fulton. 3, H. Yardley. hc, J. Read; J. Baker.

RUNTS (Any colour).—Single.—1 and Cup, Miss F. Davies. 2, T. D. Green. hc, W. R. Richards.

CUMULETS.—Pair.—1 and 3, W. B. Tegetmeier. 2, J. W. H. Thorp.

ANTWERPS (Short-faced).—Single.—1, J. J. Bradley. 2, J. W. Collinson. 3, W. H. Mitchell. hc, R. Smith; W. Slater; J. J. Bradley; H. Jennings. c, W. Binns.

ANTWERPS (Homing).—Pair.—1, Cup, and 2, H. Jennings. 3, H. Beldon. 4, J. P. Jones.

ANY OTHER VARIETY.—Pair.—1, J. Bowes. 2, H. Beldon. 3, J. Thompson. hc, J. Bowes; H. Draycott; C. Howard; H. Beldon. 3, C. C. Betty.

SELLING CLASS.—Single.—1, A. A. Vander Meersch. 2, C. H. Clark. 3, R. W. Richardson. 4, W. Croft. hc, J. S. Price; T. D. Green; W. E. Easton (2); H. Tucker; R. Dew; R. W. Richardson; J. E. Mason; J. Hawley; J. A. Greenfield (2); J. Baker; P. H. Jones.

SELLING CLASS.—Pair.—1, J. A. Greenfield. 2, J. Ford. 3, J. Read. 4, J. Thompson. hc, R. W. Richardson; J. S. Price; T. D. Green; W. E. Easton; A. H. Wood; A. Heath; H. Adams; J. A. Greenfield (3); W. R. & H. O. Blenkinsop; J. Thompson.

COLLECTION OF FOUR PAIRS OF PIGEONS (exclusive of Carriers, Pouters, and Tumblers).—1 and Cup, Rev. W. Serjeantson. 2, J. Baker. 3, G. South. hc, J. Edmon (3); O. E. Cresswell. c, H. F. Nalder.

HOMING ANTWERPS (Special Flying Classes).—1, C. L. Sutherland. 2, T. Clarke. 3, W. B. Tegetmeier. 4, W. Davis. 5 and 6, J. J. Sparrow.

RABBITS.

LOP-EARED (Yellow and White).—Buck or Doe.—1, Cup, 2, and hc, F. Banks. 3, A. H. Easton.

LOP-EARED (Black and White).—Buck or Doe.—1, T. Taylor. 2, F. Lovebond. 3, S. Hoffer. c, W. J. Johns.

LOP-EARED (Blue and White).—Buck or Doe.—1, C. Gravi, jun. 2, C. King. 3, E. Teity.

LOP-EARED (Grey and White).—Buck or Doe.—1, Cup, and 2, A. H. Easton. 3, W. Nettle.

LOP-EARED (Tortoiseshell).—Buck or Doe.—1 and Cup, A. H. Easton. 2, T. Byford. 3, F. Banks. vhc, Shaw & Allison. c, W. Gill.

LOP-EARED (Self-coloured).—Buck or Doe.—1 and Cup, F. Banks. 2, J. Cranch. 3, F. Sabbage. vhc, T. Byford. hc, J. Jennings. c, F. Lovebond.

SILVER GRAY.—Buck or Doe.—1, A. H. Easton. 2, Mrs. A. Clay. 3, S. Ball. hc, A. H. Hedges; T. W. Anns. c, H. W. Wright.

DUTCH.—Buck or Doe.—1, C. Martin. 2, W. Whitworth, jun. 3, H. E. Gilbert. hc, A. H. Easton.

HIMALAYAN.—Buck or Doe.—1 and Cup, B. S. Rothwell. 2, W. Whitworth, jun. 3, S. Ball. hc, W. H. Tomlinson. c, W. Whitworth, jun.; G. S. Burton; H. Cawood; J. F. Farrow; C. Tassell; B. S. Rothwell; J. Baron.

ANGLO.—Buck or Doe.—1, Cup, and 3, W. Whitworth, jun. 2, J. F. Farrow. hc, W. Cory. c, J. Martin; H. C. Archer.

ANY OTHER VARIETY.—Buck or Doe.—1 and hc, W. Whitworth, jun. 2, Miss M. Christopher. 3, E. S. Smith. c, F. Goodene; T. J. Imman.

SELLING CLASS.—1 and 3, W. Whitworth, jun. 2, C. Cornwell. hc, H. C. Cawood. c, J. Jennings; J. Cranch; W. Whitworth, jun. (2); W. Lock; F. Banks; J. Martin.

JUDGES.—Poultry: Capt. H. Heaton, Mr. E. Hewitt, Mr. J. Martin, Mr. R. Teebay, and Mr. J. H. Smith. **Pigeons:** Mr. E. J. Corker, Mr. F. C. Esquilant, Mr. J. Percival, and Mr. Harrison Weir. **Rabbits:** Mr. W. Heath, Mr. N. Lock, and Mr. C. Rayson.

JOHNSTONE POULTRY AND PIGEON SHOW.

THIS Show on the 9th was the finest and most successful ever held under the auspices of the Johnstone Poultry and Pigeon Society. Notwithstanding that it took place in the large Town Hall, the place proved vastly too small, the visitors being so numerous. The show of Pigeons was not so large as last year, but the quality was of a high class. The Judges, in drawing our attention to an exceedingly pretty pair of Common Tumblers which won the first prize, said they were as fine specimens as had been shown in this country for many years. The Barbs, Fantails, and Carriers were classes of high character. The following are the awards:—

SPANISH.—1, A. Glendinning, Strathblane. 2, W. Patterson, Airdrie. 3, A. Walker, Kilmarnock. hc, W. Patterson; A. Robertson, Kilmarnock.

DORKINGS.—1, Mrs. Alston, Craighead, Hamilton. 2 and 3, Z. H. Heys, Barrhead. 3, A. Carswell, Stenhouse Muir, Larbert. hc, W. Patterson.

GAME.—Black or Brown Red.—1, J. Cochrane, Barrhead. 2, G. Williamson, Johnstone. 3, R. Little, Dickstree, Longtown. hc, J. Sneddon, Linwood.

ANY OTHER COLOUR.—1, Timepiece, and c, W. Nelson, Johnstone. 2, Z. H. Heys. 3, J. Allison, Shotts Ironworks. hc, J. M'Indo, Barrhead; J. Selchane, jun.

HAMBURGERS.—Golden-spangled.—1 and Timepiece, J. Newton, Cilshean, Leeds. 2, T. Mackie, Stewarton. 3, T. Walker, jun., Manchester. hc, D. Beaton, Waterfoot, Busby; R. H. Ashton, Mottram, Manchester. **Silver-spangled.**—1 and 3, R. Mackie, Stewarton. 2, G. M'Adam, Paisley. hc, J. Holburn, Stewarton. c, G. Fullerton, Paisley.

HAMBURGERS.—Golden-pencilled.—1, R. H. Ashton. 2, W. Nelson, Johnstone. 3, R. Walker, Stewarton. hc, J. Armstrong, Longtown; Miss S. S. Lindsay, Paisley; Mrs. Alston, Craighead, Hamilton. **Silver-pencilled.**—1, J. Borland, Fouldis, Kilbarchan. 2, Miss S. S. Lindsay. 3, J. Lockhead, Milken Park.

BRAMA.—FOOTBARS OR COCHIN-CHINAS.—1 and Timepiece, T. Bruce, Busby (Cochins). 2, G. Willison, Kilmarnock (Brahmas). 3, A. Robertson, Kilmarnock (Brahmas). hc, J. G. Orr, Beith (Cochins).

SCOTCH-GRAYS.—1, R. Smith, Holmes. 2, J. Meiklem, Hamilton. 3, J. Taylor, Johnstone.

BANTAMS.—Game.—1, G. Williamson, Johnstone. 2, A. Kennedy, Kilbirnie. 3, J. Gow, Kilbarchan. hc, J. Aitken, Johnstone; Z. H. Heys; J. Holburn, Stewarton.

BANTAMS.—Any other Variety.—1, D. M'Naught, Kilmaurs. 2, R. H. Ashton. 3, J. Lockhead. hc, A. Robertson, Kilmarnock.

POLANDS.—1, Timepiece, 3, and hc, A. Wylie, Johnstone. 2, J. Laird, Johnstone.

CROSS, OR ANY OTHER BREED.—1, A. M'Ellan, Barrhead. 2, T. Walker, jun., Manchester. 3, W. A. Orr, Kilbirnie. hc, J. Fulton, Beith.

DUTCH.—Aylesbury.—1, Z. H. Heys. 2, A. Robertson. 3, A. Carswell, Larbert. hc, J. Meiklem, Hamilton. **Any other Variety.**—1, J. Meiklem. 2, A. Robertson. 3, D. Kerr, Park, Beith.

SELLING CLASS.—1, J. Sneddon, Linwood. 2, H. Wilkinson, Skip'oon. 3, J. Lockhead. hc, Mrs. Alston, Hamilton; J. Aitken, Johnstone.

ANY DISTINCT BREED.—Cock.—1, G. Williamson, Johnstone. 2, Mrs. Alston. 3, A. Glendinning, Strathblane. **Hens.**—1, Z. H. Heys. 2, A. Wylie. 3, H. Wilkinson. hc, G. Williamson. c, W. Paterson, Airdrie.

PIGEONS.

POTTERS.—1, 2, and Timepiece, J. Miller, Glasgow. 3, H. Thomson, Glasgow. c, A. Bennie, Johnstone. **Young.**—1, J. Miller. 2, W. White, jun., Milngavie. 3, A. Mitchell, jun., Paisley.

CARRIERS.—1, J. Miller. 2 and 3, J. Chadwick, Bolton.

TUMBLERS.—Short-faced.—1, 2, and 3, J. Paton, Stewarton. c, A. Johnstone.

BARBS.—1, J. Miller. 2 and 3, H. Paterson, Cambusland. c, J. Chadwick, Bolton. hc, W. Nelson, Johnstone.

FANTAILS.—1, 2, and Timepiece, J. Laird, Johnstone. 3, W. Nelson. hc, W. and A. Crawford, Beith. c, J. F. Loversidge, Newark.

JACOBS.—1 and 3, T. Baird, Galston. 2, J. Sharp, Johnstone.

TUMBLERS.—Common.—1, T. Baird, Galston. 2, J. Laird, Johnstone. 3, W. Wilson, Johnstone. hc, J. G. Orr, Beith. c, J. Glen, Cambusland.

COMMON.—1, J. G. Orr. 2, A. Gray, Beith. 3, W. Gemmell, Johnstone. hc, W. and A. Crawford. c, R. Anderson.

ANY OTHER VARIETY.—1, J. Miller. 2 and 3, J. G. Orr. 3, A. Johnstone, Baithgate.

SELLING CLASS.—1, A. Johnstone. 3, J. Allison. hc and c, A. Ashton, Manchester.

JUDGES.—Poultry: Mr. John Stewart, Helensburgh; Mr. D. H. Harley, Edinburgh; and Mr. James Paton, Stewarton. **Pigeons:** Mr. James Huie, Glasgow; and Mr. Matthew Stewart, Glasgow.

DARLINGTON CANARY SHOW.

THE, as yet, largest Show of the season, was held under the auspices of the Darlington Ornithological Society, on Friday and Saturday last, when, at its fourth annual Exhibition, something over a hundred admirers of the Canary joined issue with an aggregate collection of between four and five hundred birds.

Nor is this gratifying success any matter for surprise, for a liberal prize list, and, above all, a management in which the public have confidence, are sure to command a large measure of support, while any shortcoming in either of these respects is as certainly followed by decline. A pretty accurate knowledge of

the managers and management is soon arrived at by exhibitors who, ever willing to make a liberal discount for blunders avoidable and unavoidable, are always ready to support any committee whose antecedents insure care and attention to the valuable property entrusted to their charge, and an earnest desire to procure a clear stage and no favour for the combatants.

In all that constitutes good management the Darlington executive abounds, and the result of the experience of previous years has eventuated in a completeness of plan and business-like way of going to work which merits special commendation. Order and method are stamped on all its proceedings, and contemplating a slightly amended schedule and still more liberal scale of prizes, the Darlington Ornithological Society has before it a brilliant future.

Mr. Barnesby and I commenced our judging by the very dull light of a very dull morning. Thursday, the day set apart for the work, was no exception to previous Thursdays. It rained when it could, and when it could not it got ready for the next shower. With the Belgians we had no difficulty, Mr. Rutter coming to the front in great force. His No. 4, Clear Yellow, is one of his marvels; and No. 10, Clear Buff, is another. The third-prize birds in either class were Belgians all over, but the quality of Mr. Rutter's birds makes even high-class ones look inferior. His No. 20, Ticked Yellow, distorted himself so much that it looked as if he would never come right again.

In Clear Jonque Norwich, Mr. W. Holmes, of Nottingham, was first with by far the highest-coloured bird out this year. In the entire absence of, or ignoring any knowledge as to ownership, the only thing a judge has to do is to consider the bird, and I will just admit the readers of "our Journal" behind the scenes for a moment, and say that this one was put in the tub and passed the ordeal satisfactorily. The names of the other winners in this and the remaining Norwich classes are by this time familiar to all who take an interest in Canary Show returns. Unless something wonderful turn up in variegation, it seems as if it would be a saving of time to keep "Adams and Athersuch first," "Adams & Athersuch second," set up in type or stereotyped. Their evenly-marked birds, Jonque and Mealy, underwent a rigid examination, and are strikingly exact in the marks. One of them, No. 49, has thirteen feathers in its tail. The classification of the Crested varieties was not calculated to lead to any very satisfactory results, and I think this part of an otherwise carefully digested schedule will bear revision. In Class 10, where it was specified that the crest was to be the chief feature, No. 95, Mr. Hurrell, distanced all comers in this one respect, with a buff-green bird, which, however, showed such extreme coarseness, and was so deficient in Norwich points (for which variety the class was designed), that we were reluctantly obliged to pass over the largest-crested bird in the Show, and possibly the largest crest in England. The crest is not native to the Norwich variety, and when imported requires long and careful crossing to be maintained in conjunction with colour and quality of feather.

The Lizards formed a splendid collection. Our decisions in the Silver class do not appear to have given unqualified satisfaction. Friends from Sunderland who visited the Show on Saturday, tell me that the general impression was, that the first-prize bird was not worthy of his position, but the account they give seems to imply an oversight of such magnitude that I can hardly bring myself to believe in it. Knowing that Darlington has a giant among Lizard breeders, Mr. Ritchie, in its midst, we were extremely careful to weigh well every *pro* and *con*. in the Lizard classes, and if any oversight really has occurred, no one can possibly regret it more than the Judges. My impression of No. 152, Mr. J. N. Harrison, is that it was a great Lizard, though the price placed upon 151, shown by the same gentleman (and which was only highly commended), being more than twice the figure of the first-prize bird, seems to indicate there may have been some mistake, for Mr. Harrison is too good a judge to value a superior bird at £4, and its inferior by some degrees at £10. I am sure that neither Mr. Barnesby nor myself suppose ourselves infallible, or that when we die all knowledge ornithological will become extinct. It is more than probable that the same birds may come into competition at Cheltenham, when, if we see just grounds for reversing this or any other decision, most assuredly it will be reversed, our wish being to give a just and righteous verdict. Cinnamons were good. The Yorkshire variety is gaining ground. There are two classes at Cheltenham for these really splendid birds. They were inserted in that schedule at my request, and I think Cheltenham is the first town in the south which has recognised these favourites of the north. Though there are but two classes, Clear and Variegated, they will, if supported, be extended to the usual limits, and I do hope that all exhibitors of this handsome Canary will see it to be almost a duty to acknowledge the liberality which offers a higher prize for their speciality than any show in the kingdom. Mr. Rawnsley's Variegated birds are enough to drive anyone wild! Mr. Mills's Evenly-marked Cinnamon, first in "Any other variety," is very neat. The Selling class was well supported, and the "Cages of six" were something excellent.

Mules, as a whole, were nothing extra, but the winning birds were magnificent. No. 306, Mr. R. Hawman, is a fine Jonque. Mr. Mills's 303, though not absolutely exact enough to stand the test of the words "Evenly-marked," is a bird of great promise—a Jonque. Brown Linnet Mules took the honours in Class 27. It is a pity the true meaning of the word "variety" is not more considered when met with in a schedule. After providing classes for Goldfinch and Canary Mules, and then a class for Any other variety, it is absurd to enter any class of Goldfinch and Canary Mule in this class, when this variety has already been provided for. No. 320 in this class was a Clear Buff Goldfinch and Canary Mule, ticked in front of each eye.

Foreign birds were not numerous, but a "South American Starling," exhibited by Mrs. Cross, Appleby Vicarage, Briggs, was much admired. British birds were strong, of good quality, and in excellent condition. The first Goldfinch and first Linnet are nice birds. The miscellaneous collection of British birds was very interesting, including fine specimens of Thrush, Blackbird, Skylark, Starling, Jay, Yellowhammer, Chaffinch, Brambling, &c. When will our ornithological societies offer prizes for collections of British birds' eggs?—W. A. BLAKSTON.

REARING DUCKS.—One mistake made by some admirers of these fowls is to allow young Ducks too free access to such supplies of water as afford gratification to the older ones. This should never be done. The young should never be suffered to go near a pond or creek, nor in wet grass, until from ten to fourteen days old. Previous to that age they should be kept in a warm, dry place, and be allowed no more water than might be sufficient for them to dip their bills in. At the age of a fortnight let them have access to the larger supply.—(*Poultry Bulletin*.)

BEES AND HONEY AT HORTICULTURAL AND AGRICULTURAL EXHIBITIONS.

Mr. Fox wishes from others information about exhibiting bees, and as I have been an exhibitor for many years, to encourage the profitable and humane system of working bees I will make a few remarks on the subject.

"A SOUTH LANCASHIRE BEE-KEEPER" is mistaken in saying that he believes Middleton, near Manchester, Agricultural Show was the first to introduce bees and offer prizes for honey and bees, as it was only on September 22nd, 1864, that I exhibited the first bees at that Show. The bees at work were such a very great attraction, that the following year I gave some prizes for bees, hives, and honey, and fixed the prizes to be given—viz., For the best make of bar-frame hive containing bees at work. For the best honeycombs in bar-frames collected in 1865. For the best honeycombs in any other make of hive collected in 1866. For the best bell-glass filled with honey collected in 1865. There were no less than thirteen entries for these prizes, and the crowds of people surrounding them all day was so very great, that it required two men to be constantly asking the people to be kind enough to move forward. The great interest taken in this exhibition of bees at work by all classes of society convinced the Committee of the Middleton Agricultural Show of the large pecuniary benefit they would secure by regularly offering prizes for bees, honey, &c. This is the eighth year prizes have been given, the interest in them is greater than ever, and numbers go to the Show from a great distance on purpose to see the bees. The prizes given amount to £8. I believe the Middleton Agricultural Show is the third in England, and distributes more than £1100 at the annual meeting. If the Royal Agricultural Society would offer prizes for bees, &c., I think they would do much good.

In 1867, I exhibited my bees at work, honey, hives, &c., at the Manchester and Liverpool Agricultural Society's centenary celebration, held at Manchester, August 27th, 28th, and 29th. I had my bees on a table in a tent in the centre of the show ground, and allowed them to go out or in as they liked, and I did not hear of a single person being stung. On the side of the tent where the bees came out I put two posts about 3 yards from the tent, and tied a rope from the tent round them, so that the people did not pass close to the bees' alighting boards. The tent was crowded by visitors all the three days, there was nothing at the Show that was a greater source of attraction, and the Society gave me their large silver medal. The receipts for admission to that Show for the three days amounted to £2,850.

In 1869, the Royal Agricultural Society of England held their meeting at Manchester from July 16th to 24th, and I exhibited my bees at work, honey, hives, &c. They were in a tent the same as at the Manchester and Liverpool Show, and in the centre of the yard. The bees went in and out as they liked, and one stock that I had there gained 153 ounces whilst at the Show. I merely put two posts and a rope to keep the people from the entrance to the hives, and I did not hear of anyone being stung except a carter's boy, who with some others was looking at the bees flying out, when he pulled off his cap and made a sweep at a number of them, drawing the cap to his breast, when he ex-

claimed to his companions, "Aye! I have got them," and they flocked round him to see the treasure he had secured. When he lifted his cap a little from his breast, some of them escaped, and one of the bees flew right at him and stung him just below the eye; I did not again hear him say, "Aye! I have got them."

At our Great National Horticultural Exhibition, held at the Botanical Gardens, where they give away £1000 in prizes, I have exhibited my bees at work, honey, combs, &c., for several years, and they have always been a very great source of attraction, having much increased the Society's funds for admission. The crowds of fashionable people round them for a week have been very great indeed. One day I was standing outside the crowd and saw an old country bee-keeper whom I knew, trying for a long time ineffectually to get to the table to see the bees, but there were so many before him, he would have been obliged to have waited a long time, so I heard him say, "Hang it, I will see them." He went away for a few minutes, when he came blustering up again, calling out when he got to the crowd, "Now, then! Now, then! we will let them out." The words were like magic. The crowd backed away from the table, and he had it all to himself.—WILLIAM CARR, Manchester.

OUR LETTER BOX.

BREEDING BLACK RED GAME BANTAMS (Brown Red).—If your chickens are too dark, a wheaten hen will make them lighter. We are not friendly to crosses of any kind, and do not, therefore, approve your idea of the Duckwing. We cannot recommend any dubber, but there are numbers of them throughout Lancashire. If you wish to breed Duckwings, breed from pure birds. It is tiresome work breeding-out. You cannot breed good chickens in a very small place; the parents may live there and lay well, but chickens want a run. The old birds may live in the space you name if they have sun, and you take pains to supply them with all they would have at liberty. It is useless to think of rearing chickens there.

POINTS IN GOLDEN-SPANGLED HAMBURGERS (G. F. R.).—Deaf ear, comb colour, spangling, and tail are among the principal points of a Spangled Hamburg. The importance of each depends on the judge or judges.

BREEDING DUCKS (Amateur).—From ten to twelve months old, but they will breed younger. A drake at six years is too old.

HOUDAN HACKLE FEATHERS (I. J.).—Red feathers in the hackle of a Houdan would be fatal to any chance of success if any bird were shown without them. Yellow feathers may be overlooked, but red are inadmissible.

BRADIA HEN WITH FALLEN CROP (A. F. N.).—Take your hen by the legs, and hold her up, head downwards, till all the contents of the crop have run out. Then keep her in confinement, and feed her frequently, very little at a time. The crop will then assume its natural state after a while.

COCHIN-CHINAS' SCALY LEGS (H. J. D.).—The disease in question—poultry elephantiasis, has only appeared of late. We have known it about six years. Houdans and Spanish had it first, then Cochins. It came after heavy snow, and we hoped that with fine weather it would disappear, but it did not, and from that time we can always at a moment's notice supply specimens in various stages of the disease. We have always attributed it to the French breeds, and have never known a Dorking affected by it. We bred once from a cock and hen, both suffering from it; only two or three of the chickens had it, and they did not have it till they were nearly adults. If we were compelled to answer the question of its being hereditary, we should be in a great difficulty. We could only say, like Sir Roger de Coverley, "Much may be said on both sides of the question." We should prefer breeding from a clean-legged hen; but if one with scaly legs possessed points or properties about which we were anxious, we should breed from her. An entirely milk diet is said to cure elephantiasis. We should like to have it tried for scaly legs.

DUCKS FOR EXHIBITION (E. B.).—If you are in a Duck country 6 lbs. is not heavy enough. You do not state the breed, but as you say they are well marked, we suppose they are Rouens. They should weigh 15 lbs. the pair. Accurate marking is, however, a great point.

BUFF COCHINS (T. S.).—Have birds of an even colour, and free from vulture hocks, combs well serrated, strictly straight and upright, well-feathered legs. If the cock's tail is of the same colour as his body, so much the better. If it is black it cannot be helped. The pullet should have no black on the points of the hackle. They should be short-legged and well stuffed.

GAS TAR ON FOWLS' PLUMAGE (G. E. S.).—We know nothing that will remove tar from the plumage of fowls or Pigeons.

FEEDING FOWLS (T. Sydenham).—We cannot answer your question properly, because you do not tell us the breed of your fowls. Some lay earlier than others. Those hatched in April should lay next month, those in May in January. We should not think the hens will lay yet. You must be guided by observation as to the quantity of food. If you can get ground oats, give them slaked oats morning and evening, a feed of Indian corn whole at mid-day. If you want eggs, they must also be well provided with road grit, and with large heavy sods of growing grass. Give some kitchen scraps in bad weather instead of the maize.

WATER FOR FOWLS, &c. (W. S.).—If it is supplied fresh daily, it matters not whether it be hard or soft.

GROUND COLOUR AND MARKINGS OF AN ALMOND TUMBLER (M. Green).—The ground colour should resemble that of the inside of the shell of the almond nut. Having this as the ground colour, the whole of the body should be neatly and evenly pencilled, not splashed or spangled, with a clear black. This should be particularly the case on the neck and rump. Each feather in the thighs and tail should be evenly and distinctly broken with the three colours—black, white, and the yellow or ground colour. Such is the description given by the Birmingham Columbarian Society in an admirable article in our number for August 11th, 1870, which see for further information on this beautiful variety.

HIVES UNDER A ROOFED STAND (—).—Your bees exposed to strong winds prevailing from south-west, on a stand with a roof and close ends, may be closed in front if you leave a hole to correspond with the entrance of the hive itself. It will never do to close it entirely, allowing them to find their way out at the back. You would lose half your bees before March. You may certainly

close the entrances in very stormy weather, provided you open a hole at the top, and cover it with a cap or box for ventilation. Be careful, however, to re-open them early in the day whenever the storms are over. You may continue this treatment until March without injury—rather with much benefit to the hives. Do not turn them to the east. In very severe frost, or when snow is lying about, we would shut them in in the same manner.

SKELETON LEAVES.—"A SUBSCRIBER" asks if a book on this subject is published, and "L. M. E." says that a very comprehensive little pamphlet is published by John Kaye, Mason View, Didsbury, near Manchester.

METEOROLOGICAL OBSERVATIONS,

CAMPDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	A.M.				IN THE DAY.					Rain.
1872.	Baromet. ter at 98° and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Tem- perature.		Radiation Temperature		
Nov.		Dry.	Wet.			Max.	Min.	In sun.	On grass	
We. 13	Inches. 30.059	deg. 36.5	deg. 34.2	N.E.	deg. 43.3	deg. 41.8	deg. 39.3	deg. 32.3	deg. 29.9	In. 0.140
Th. 14	29.688	36.2	36.2	N.E.	42.3	41.5	39.3	31.5	32.2	0.290
Fri. 15	29.941	37.1	36.1	N.E.	43.2	42.8	34.4	45.8	39.1	0.162
Sat. 16	29.491	37.9	36.9	N.	42.6	40.8	36.6	46.1	36.3	—
Sun. 17	29.729	35.7	35.6	S.W.	42.4	39.6	32.0	51.6	33.1	—
Mo. 18	29.582	33.2	33.0	W.	41.6	40.4	31.7	45.2	28.2	0.460
Tu. 19	29.495	35.2	35.7	W.	41.8	46.3	33.2	45.9	34.3	0.090
Means	29.712	36.1	35.4		42.3	41.9	33.6	55.9	32.0	1.142

REMARKS.

13th.—Very fine till noon, then clouded over; rain at 2.40 P.M., then bright again. Rain recommenced about 8 P.M., and continued more or less all the evening and night.

14th.—Snow at 9 A.M., fine in the middle of the day, rainy after 3 P.M.

15th.—Rain at short intervals all day, with boisterous north wind during the evening and night.

16th.—A very dull day, neither sunshine nor rain, but hazy and dark throughout.

17th.—Rather finer day, a little sunshine about noon, but rain between 3 and 4 P.M., and occasionally afterwards.

18th.—Rain at 9.30 A.M., and at intervals all day, and very dark.

19th.—Very fine all the forenoon, but dark and damp though not rainy after till late in the evening.

Mean 9 A.M. temperature, 9° less than last week, and ground temperature 5.6° lower, being a more rapid decrease than has occurred for many months. Barometer oscillating very much and low. Rainfall again in excess, the total amount being over 1 inch.—G. J. STOKES.

COVENT GARDEN MARKET.—NOVEMBER 20.

So little change has taken place both in supply and demand, that former quotations are quite applicable to the present condition of the markets. Good sound Regent Potatoes have slightly advanced in consequence of a better demand, but it is not a general thing.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	½	sieve	3	0 to 5	Mulberries.....	½	lb.	0	0 to 0
Apricots.....	doz.	0	0	0	Nectarines.....	doz.	0	0	0
Cherries.....	per lb.	0	0	0	Oranges.....	£	100	6	12
Chestnuts.....	bushel	13	0	0	Peaches.....	doz.	0	0	0
Currants.....	½ sieve	0	0	0	Pears, kitchen.....	doz.	1	0	0
Black.....	do.	0	0	0	dessert.....	doz.	2	0	4
Figs.....	doz.	0	0	0	Pine Apples.....	doz.	4	0	8
Filberts.....	lb.	1	0	1	Plums.....	½ sieve	6	0	9
Cobs.....	lb.	1	0	2	Quinces.....	doz.	1	0	2
Gooseberries.....	quart	0	0	0	Raspberries.....	lb.	0	0	0
Grapes, hothouse.....	lb.	2	0	5	Strawberries.....	½ lb.	0	0	0
Lemons.....	£	100	6	10	Walnuts.....	bushel	15	0	30
Melons.....	each	2	0	5	ditto.....	£	100	3	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	doz.	2	0 to 4	0	Mushrooms.....	pottle	1	0 to 3	0
Asparagus.....	£	100	0	0	Mustard & Cress.....	punnet	0	2	0
Beans, Kidney.....	£	100	1	0	Onions.....	£	bushel	2	0
Broad.....	bushel	0	0	0	Pickling.....	quart	0	6	0
Beet, Red.....	bushel	0	0	0	Parsley per doz. bunches	doz.	0	6	0
Broccoli.....	bunch	0	9	1	Parsnips.....	doz.	0	9	1
Cabbage.....	doz.	1	0	1	Peas.....	quart	0	0	0
Capsicums.....	£	100	2	0	Potatoes.....	bushel	3	6	0
Carrots.....	bunch	0	6	0	Kidney.....	do.	0	0	0
Cauliflower.....	doz.	2	0	4	Round.....	do.	0	0	0
Celery.....	bunch	1	6	2	Radishes.....	doz. bunches	1	0	1
Coleworts.....	doz. bunches	2	0	3	Rhubarb.....	bunch	0	0	0
Cucumbers.....	each	0	3	1	Salsify.....	£	bunch	0	9
pickling.....	doz.	0	0	0	Savory.....	doz.	1	0	2
Endive.....	doz.	2	0	0	Scorzoneria.....	£	bunch	0	9
Fennel.....	bunch	0	3	0	Sea-kale.....	basket	2	0	0
Garlic.....	lb.	0	6	0	Shallots.....	lb.	0	8	0
Herbs.....	bunch	3	0	0	Spinach.....	bushel	2	0	3
Horseradish.....	bunch	3	0	0	Tomatoes.....	doz.	1	0	0
Leeks.....	bunch	2	0	0	Turnips.....	bunch	0	0	0
Lettuce.....	doz.	0	9	1	Vegetable Marrows.....	doz.	0	0	0

POULTRY MARKET.—NOVEMBER 20.

We have a full market and rather heavy trade. Pheasants are coming in more plentifully. Hares remain scarce, and so are young Partridges.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls.....	3	6	to	4	Hares.....	3	0	to	3
Smaller ditto.....	2	6	3	0	Rabbits.....	1	5	to	1
Chickens.....	2	0	2	3	Wild ditto.....	0	9	to	1
Geese.....	6	0	7	6	Pigeons.....	0	10	to	1
Ducks.....	2	0	2	6	Pheasants.....	2	6	to	3
Grouse.....	1	9	2	0	Partridges.....	2	0	to	2

WEEKLY CALENDAR.

Day of Month.	Day of Week.	NOV. 28—DEC. 4, 1872.	Average Temperature near London.			Rain in 48 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
28	TH	John Ray born 1628. ST. ANDREW.	48.1	33.9	41.0	22	41 af 7	54 af 3	33 4	50 2	27	11 41	333
29	F		51.3	33.8	42.5	20	43 7	53 3	34 5	10 3	28	11 20	334
30	S	1 SUNDAY IN ADVENT.	48.0	34.5	41.3	22	44 7	53 3	19 7	38 3	●	10 58	335
1	SUN		48.5	34.9	41.7	22	45 7	52 3	43 8	15 4	1	10 35	336
2	M	Entomological Society's Meeting, 7 P.M. Royal Horticultural Society's Fruit, Floral, [and General Meeting.	47.4	33.7	40.5	19	47 7	52 3	0 10	6 5	2	10 12	337
3	TU		47.0	35.8	41.4	24	48 7	51 3	2 11	17 6	3	9 48	338
4	W		48.1	36.4	42.2	20	50 7	50 3	50 11	37 7	4	9 23	339

From observations taken near London during forty-three years, the average day temperature of the week is 48.3°; and its night temperature 34.7°. The greatest heat was 62°, on the 1st, 1857; and the lowest cold 14°, on the 30th, 1856. The greatest fall of rain was 1.21 inch.

PREVENTING AMERICAN BLIGHT—SIMPLE MODE OF RAISING APPLE-TREE STOCKS.

THE horticultural mind in Australia has of late years been much exercised upon the subject of fruit-tree stocks, and especially upon those suited to the Apple. This tree has for many years been the victim of the American blight in its most virulent form, and its culture has been attended with great difficulty: only, indeed, by the most constant care and rigid attention has the grower been able to keep his trees clean and healthy, and, as a rule, the more valuable the variety the greater the trouble involved. The older orchards of Victoria frequently present a most disheartening spectacle, the trees being gnarled and knobbed from rootlet to branchlet from the abundance of the aphides. The result has been that planters of late years are careful to avoid those kinds most prone to these attacks, and as a consequence many favourite Apples of English orchards have well-nigh gone out of cultivation.

The pest is a serious one, even in England with her shorter periods of genial weather, and the severe frosts of winter to keep in it check, but in Victoria it meets with conditions peculiarly favourable to its development and rapid diffusion. The winters are so mild as to seldom necessitate the retirement of the aphides from the branches to the roots, and on not more than two or three days during summer are the winds sufficiently hot to destroy the insects. The hot north winds sometimes attain the exceptional temperature of 140°, and these may, perhaps, be regarded as the most effective remedy for the blight; the misfortune, however, being that the blast is equally destructive to the season's crop, and a few weeks serve but to cover the trees again with the insects, a stock of which is always to be found at the roots of the trees.

It will be seen, then, that it becomes a matter of momentous interest to secure varieties not liable to blight, and to procure these varieties worked upon stocks equally robust and free from such liability; for it is of little use having healthy heads to the trees if the roots are a mass of corruption. The Apple tree became, then, a matter of special study by a few good cultivators in Victoria, prominent among whom was Mr. Thomas Lang. This gentleman, seeing the perfect immunity from blight which the Winter Majeting enjoyed, thought this variety might be propagated largely for stock purposes, and for many years by every method possible he raised thousands of these, and worked the general run of varieties upon them. This experiment and its fair promise of success (so far as keeping the roots clean and healthy), led others to enter upon the study, and the gardens of the Horticultural Society of Victoria afforded a ready means of determining the varieties suited for experiment. Of the many hundreds of varieties in the Society's collection not more than ten or twelve were found proof against the attacks of the Aphis lanigera. Of these, Northern Spy, Majeting, Early Crofton, New England Pigeon,

Charleston Pippin, and Subbart's Codlin were absolutely free; while Court-Pendu-Plat, Gravenstein, Duchess of Oldenburg, and Isle of Wight Pippin were so slightly affected as to be deemed worthy of a place in the "ex-empt list." All these varieties have been extensively propagated at the Society's gardens; but the difficulty presenting itself was that of being able to secure them upon their own roots, free from all trace of even a rootlet liable to blight. For some time this was managed by layering old plants, and so inducing them to form roots, which at the grafting season were taken up, cut into slips, and the non-blighting varieties grafted thereon. This was a slow process, and altogether inadequate to meet the requirements of the case, for the public rapidly took up the idea, and were loud in their demand for trees upon non-blighting stocks. The attempt to grow stocks from cuttings proved an utter failure; they rooted feebly, and died off with the first trying hot day, or, at best, made but weakly plants, quite unsuitable to serve as stocks for healthy trees.

Things were in this state when the following plan was adopted at the gardens of the Horticultural Society of Victoria; and as the experience there gained may be of use to English growers, it may be interesting to describe it in detail.

The object sought was a supply of roots of non-blighting varieties, and in sufficient quantities to enable the grower to utilise every scion of a valuable tree. The shoots of the past season's growth are taken and made into cuttings in the usual way, of about 6 inches in length, with four or more buds on the cutting. An upward cut is made, as shown in



Fig. 2.

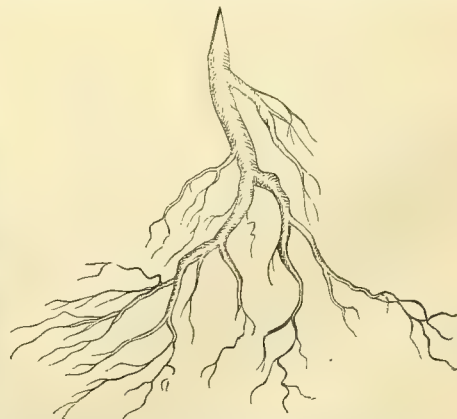


Fig. 1.

Fig. 1.—Small portion of fibrous root prepared for insertion in the cutting.
Fig. 2.—Cutting of Apple shoot of last season's growth, with an upward cut, a, indicating the point for insertion of root slip. The lower buds are to be cut or rubbed off as is customary.

Fig. 2, in the side of the cutting, about an inch or two

from its base, and in this slit is inserted the tongue of a small fibrous piece of root (*fig. 1*), and secured by being tied with a strip of calico. The cuttings so treated are then planted firmly, without claying, in rows 3 feet apart, and 9 inches between each cutting. Properly done and planted in a good soil on a warm sheltered border, there will not be a single failure, and the plants will make a growth of from 4 to 6 feet in the first season. The time best suited for the operation in Victoria is the usual grafting season (July and August); but the late autumn months (April and May), are also suitable there. At the June (midwinter) meeting of the Society fine strong plants of the Northern Spy Apple were shown with a mass of healthy root-fibre proceeding from the base and sides of the cutting. These plants were from 6 to 7 feet in height, and more than an inch in diameter at the base, and the Honorary Director reported that in no case had a failure occurred in the rows of cuttings.

At the end of the first season the plants are headed-back, and the foster root which was inserted in the cutting may be cut away if liable to blight, but if known to be blight-proof it is left. These plants may be taken at once and planted in their permanent position, or they may be trained in the nursery rows; or, better still, they will be available for stocks for grafting the tender varieties.

There seems as yet to be no valid objection to the use of stocks so raised, and it may be commended to English growers as worthy of a trial. It may be argued that plants from cuttings will not have the constitutional vigour and stamina of a seedling, and therefore would be found unsuitable as stocks for standard trees, but this objection is a purely theoretical one. The plant from a well-rooted cutting differs but little from the seedling plant from which the tap-root has been removed in the seed bed, and this is the common treatment of seedlings in inducing them to throw out lateral roots, and in preparing them for transplanting. The plan suggested has this advantage, and in a climate like that of England it is not a trifling one—the cuttings may be prepared under shelter, or at night when more pressing work is on hand during the day. It is only necessary to have ready a few bundles of pruning cuttings and a supply of fibrous roots taken from the healthiest of the established trees, when the operation becomes an interesting one in which women and even children may take a part. An expert hand could easily manage to prepare two hundred an hour.

It is surely a great point gained to be able in a single season to secure robust plants, which may be budded or grafted as the time comes round for those operations.—W. C.

FORMING A ROSE GARDEN.

LEAVING the situation of the Rose garden and the form and arrangement of its beds to be noticed further on, let us at once turn our attention to the preparation of the soil, the selection and planting of the Roses, and their after-management. Many kinds will grow fairly in the poorest soil if it is well drained and enriched with manure; but when we wish for perfection in foliage, bud, and flower, better fare must be provided. A rich mellow loam very fibrous, with an admixture of quite one-third old well-rotten dung, is the kind of soil to make success a certainty, and to enable one to almost defy orange fungus, mildew, and other diseases. Care must be taken to guard against any chance of stagnant water accumulating near to or among the Rose roots, and to do this thoroughly a simple drain or two of common pipes will be all that is necessary.

Planting is undoubtedly most advantageously done in November, yet it may be safely carried out at any favourable time during winter, or even early in spring, only in the latter case a season will be lost, for a Rose planted early in November immediately puts forth numerous rootlets, thus enabling it to start into growth in the following spring as quickly as an established plant, and with an equal degree of vigour; in fact, it is an established plant. Advantageous as this system is, it may not always prove desirable to follow it strictly, as I experienced last season, when, in forming a collection of Tea and Noisette Roses, most of the choice old kinds were procured from a nursery where these tender kinds are raised entirely in the open ground, and they were at once planted in the stations prepared for them against the walls. The new kinds were only to be had in pots, the long weakly growth bearing sure token of the high-pressure system by which they had been forced into size at the expense of strength, and plainly showing

that they possessed neither stamina nor hardihood to withstand the effects of severe frost. They were, therefore, kept under shelter in the pots till spring, when they, too, were turned out into the permanent stations. It need hardly be stated that the autumn-planted trees have thriven best, yet considering the later season of planting and the weakly condition of the pot plants, it may justly be said that they have made a satisfactory growth.

Some other important cultural details have so lately been practised, that they will be best noticed as I tell what was done in the formation of a Rose garden last season, and the treatment of the plants during the past summer. The beds were excavated 2 feet deep, and filled with rough and very fibrous sods of a deep red loam largely impregnated with oxide of iron, and a liberal mixture of manure was worked-in with the soil. I was unable to plant the Roses till the third week in December. Now, these Roses were not upon their own roots as I have so often advised they should be, but were on Manetti roots, not stems, for they were dwarf bushes. The reason such plants were selected was because it was found difficult to obtain plants on their own roots from a nursery. Pruning and mulching were done with the planting. The plants were stout and healthy, and notwithstanding the lateness of planting, I looked forward to the spring with confidence. Meanwhile steps were taken to ensure an abundant supply of liquid manure, and with a few bundles of slight stakes we were ready for the summer campaign.

Pinching and training followed the first spring growth, and were continued constantly till August, during which time no plant was allowed to carry a single blossom. Sheep-dung water was given in large quantities once, and very often twice a-week, especial care being taken to have this well attended to, for on it depended not only the health of the plants, but my especial aim, which was to obtain so much vigour as to ensure a good display of bloom in autumn without affecting the constitution of the plants. Success crowned these efforts, and by the end of August abundance of flowers were opening, and the plants continued blooming profusely till checked by the cold rains of autumn.

As each plant became large enough to develop the peculiar features of its kind, it was interesting to note how much sooner some could be brought to the desired form than others. This diversity of growth is, of course, a guide in training; thus the stiff, sturdy, and erect growth of Baroness Rothschild requires pinching at every two or three eyes, while the short-jointed flexible shoots of Impératrice Eugénie may with equal advantage be allowed much greater freedom of growth.

Of the varieties which appear to me to be the most suitable for such a purpose, I may extract the following from my list, with a word or two descriptive of their size and appearance while they were in flower in September.

La France.—Several fine pyramids; the best was 2 feet in diameter at its base, and quite 4 feet high, with twenty clusters of its full and exquisitely-formed pink flowers.

Madame Alfred de Rougemont.—Literally a mass of bluish white flowers in large clusters; the plant measured 2 feet in diameter at its base, tapering upwards to the height of 3 feet.

Empereur de Maroc.—As large as *La France*, and very symmetrical. The exquisite deep rich colour of its flowers offers a brilliant contrast to the dull hue of many dark varieties, and renders it a desirable sort.

Dr. Andry.—Eighteen inches in diameter and 3 feet high. All the plants of this fine Rose have done well and flowered freely.

Impératrice Eugénie.—This is a charming kind, forming pretty low bushes, and yielding a profusion of bluish-white flowers.

Alfred Colomb.—Eighteen inches in diameter at the base, and 2 feet 6 inches high. This Rose, from the beauty of its foliage, as well as the splendour of its very fine flowers, is as desirable for the Rose garden as it is for the exhibition table; it possesses so many points of excellence that few are equal to it. Its growth was very robust, with the foliage free from the slightest flaw or disease throughout the autumn. I was agreeably surprised at this, as I understood it was not a strong grower on the Manetti. On the 20th of September I particularly noticed one plant, which then had twenty trusses of partly expanded flowers, contrasting beautifully with its foliage of a deep glossy green.

Prince de Portia.—An attractive kind of a compact habit of growth, with flowers of a fine, deep, rich tone.

Marie Baumann.—This beautiful kind produced its very large

and finely-formed flowers freely. The plants of this and the preceding variety were uniform in size with Alfred Colomb.

Madame Victor Verdier is one of those fine Roses which at once attract; it has a compact habit of growth, and its abundant flowers have a very rich effect; the opening buds, too, are very lovely. The plants of this kind were good in every instance.

Duc de Cazes.—Two feet in diameter, and 4 feet high; this good old dark kind flowers freely, and its graceful growth is not too much crowded.

Louise Darzens.—Some pretty plants, each a mass of pure white flowers.

Mdlle. Bonnaire.—A charming variety, very robust, with fine clusters of bluish-white flowers.

Annie Wood.—Fine vigorous plants of a yard high, and 2 feet in diameter at the base. Its brilliant-coloured flowers are particularly attractive when partly expanded.

Xavier Olibo.—A charming little plant, about 2 feet high, covered with rich glowing crimson flowers.

Devienne-Lamy.—Of a good habit of growth, and producing fine full flowers.

Reine du Midi.—A very fine kind, forming robust well-shaped plants.

Prince Camille de Rohan.—Pretty compact bushes, very effective with its rich crimson flowers.

Of other varieties worthy of special note there were Beauty of Waltham, Louisa Wood, Henri Ledechaux with its exquisite flower-buds, Sœur des Anges, Elizabeth Vigneron, Antoine Ducher, and Madame Alice Dureau.

It is singular that in the selection of Roses and the frequent papers on Rose culture, so little attention is given to anything but the production of flowers suitable for the exhibition table, the great beauty of the foliage and opening buds being apparently lost sight of. Far less surprising is the little value attached to a compact habit of growth, for so long as those anomalies of our garden—standard Roses, find favour among Rose-growers, it is impossible that symmetry of form in the growth can be cared for.

The chief objection to the formation of an extensive Rose garden—that is to say, a garden or design containing nothing but Roses, is the tame and somewhat forlorn appearance of the Rose trees in winter. Carefully-trained conical bushes such as I have described are not uninteresting objects even then; but it must be granted that the eye, missing the gracious freshness and beauty that have departed with the winds of autumn, turns to evergreen shrubs for the gratification vainly sought for among the Roses. On this account it would appear desirable to disperse the Rose beds among others containing Rhododendrons and Hollies, with occasional specimens of choice Conifers springing from the turf singly or in groups. Then, even when the Roses are in their summer beauty, the shrubs would form an excellent foil to the flowers, and impart an air of repose to the bright scene. In winter, again, the monotonous aspect of bare branches would be lost sight of in the pleasing aspect of the graceful forms by which they are surrounded. The Rose beds should be small enough for every bush to be inspected from the sides; no form can be better for such a purpose than a circle sufficiently large to contain two rows of plants, with a large specimen of some well-known kind in the centre.—EDWARD LUCKHURST.

SPOT ON GERANIUM LEAVES.

The leaves sent by "J. S. E." and others are suffering from "spot," as gardeners call it—a kind of mildew, which appears as brown and yellow rings through the leaves, and arises from one of two causes—either from the roots being too dry, or, which is more generally the case with plants in greenhouses at this time of the year, from want of sufficient heat and air; in other words, the houses are kept too close and damp. Often, by way of remedying the disease, the plants are not watered, which tends to make the disease worse, as a proper balance is not kept up between the action of the roots and the leaves. Plants this year are more than ever liable to the disease, owing to the amount of moisture in the air and a corresponding want of sun, and those plants which have been kept out of doors in pots have had a more than ordinary amount of rainfall; the consequence is the leaves are full of sap, the shoots not matured by the sun, and any check the plants experience on being put into their winter quarters is liable to produce the spot, which begins by a small fungus on the pores of the leaves. The remedy is to give more heat,

dust the plants with sulphur, and keep up sufficient root-action, giving the plants at the same time all the light possible, with good ventilation. By ventilation we do not mean cold draughts of air, but sufficient warm air to encourage healthy action both in the leaves and roots. It is very strange that black mildew, which so often attacks Rose leaves in dry weather, often results from the same cause, the proper balance between the action of the roots and leaves not being kept up.—C. P. P.

CHRISTMAS ROSE (HELLEBORUS NIGER)

CULTURE.

THIS is one of the best of the genus *Helleborus*, which contains several species, two of which are to be found growing wild in many parts of England. There appear, however, to be some doubts whether these were not at an earlier period introduced from other parts.

H. fetidus (Bear's Foot), from its ornamental character, sometimes finds a place in the foreground of shrubberies; it differs from *H. niger* in its inflorescence consisting of numerous flowers in a large loosely-spreading panicle, while the flowers of the latter are either solitary or in pairs; also from *H. viridis* (the Green Hellebore), the flowers of which are smaller, and of less beauty.

The Christmas Rose is an Austrian species, and was introduced in the year 1596; so that it is a somewhat old occupant of our gardens.

From the fact of some plants being of old introduction they are frequently neglected, but the Christmas Rose is generally cherished; still there are many who do not bestow on the flowers the little protection which they ought to have at this time of the year. They are extremely useful for cutting, but when exposed to all weathers at this season they are soon rendered unfit for the purpose. Some spare bell-glasses, even if only large enough to cover the crowns, leaving the foliage outside will suffice, removing them during the day on all favourable occasions. This is probably the best plan of protecting, for, besides keeping the blooms clean, it will greatly prolong the season of flowering.

For the last two or three winters I have seen about a score of plants (which are growing in a narrow border by the side of an Orchid house), treated in this manner yielding an abundance of flowers, which are highly prized when other and more choice flowers are scarce. Those who have not bell-glasses at hand may use two pieces of thin board, slate, or tiles, placing one against the other in a slanting direction, thus A, so as to shelter them from heavy rains.—C. J. WHITE.

JOTTINGS ON THIS YEAR'S GARDENING.—No. 5.

THE present has been a most disastrous season for fruit. Severe frosts in March, accompanied by snow, also in April, and repeated in May, have resulted in the fruit crop of this district being a failure. The year has been characterised by frosts in spring and early summer, which told with dreadful effect after the mild winter and early part of spring. The wet summer and autumn were conducive to growth rather than the ripening of the wood, so that bad as the present year's fruit crop has been, the prospect of that of the next season cannot be looked upon as promising.

The disasters of the fruit crop began with bullfinches clearing the Plums of every fruit-bud. The Plum trees bristled with buds; the bullfinches and linnets took all, except those of a tree on a west wall, which gave a few fruit. It is the Prince of Wales. Our other trees on walls are only two years planted, so that it could not be expected they would fruit. I may say the Plum crop is a failure in this neighbourhood.

Apricots and Peaches none. Our trees are young, those having older trees have not had fruit.

Pears had plenty of blossom. The only kinds that have produced fruit are Jargonelle, Doyenné d'Été, Williams's Bon Chrétien, Beurré Diel, Comte de Lamy, Zéphirin Grégoire, and Bergamotte Esperen, and the only trees of these equal to a crop were the last-named three.

Against walls the only kinds that fruited were Beurré d'Amanlis, Beurré Superfin, Louise Bonne of Jersey, Beurré Diel, General Todtleben, Van Mons Leon le Clerc, and Alexandre Bivort.

Apples, though latest of fruits in blossoming, did not escape frost. The kinds that have borne a full crop are Warner's King, Bedfordshire Foundling, Norfolk Bearer, and Northern

Greening. Keswick Codlin had a full crop of small, very much pithed fruit. The other kinds that had fruit were Cox's Pomona and Ribston Pippin.

Cherries were a total failure, even the Morello failed.

Of Raspberries we had a good crop. Fastolf grows very strong here and bears heavily, but does not produce nearly such fine large fruit as Antwerp Red, which grows weakly, having short canes. Our Raspberry plantation has not had the soil moved with either a spade or fork these three seasons; and so convinced am I of the soundness of the plan of not disturbing the ground, and of mulching 9 inches to a foot thick with litter after the canes are thinned, shortened, and tied (leaving the mulching on constantly throughout the year), that I shall continue it, and not only with Raspberries, but with Black Currants as well. This season, after pruning, I shall mulch the ground all over the plantations of Gooseberries and Red Currants with litter 6 to 9 inches deep, not disturbing the soil at all. I am persuaded it would answer well for every kind of fruit tree, particularly in a light soil. This depth of litter is entirely gone by the autumn following its being put on.

Gooseberries were about half a crop. Red and Black Currants good.

Strawberries were good, but suffered much by the heavy and continued rain. The best was Sir Joseph Paxton, planted out from pots after forcing. Next came President, also plants that had been forced, then Sir Charles Napier, Dr. Hogg, and British Queen; the last three the second season after planting. The year following a July planting, Strawberries are not a crop; they bear a few fine fruits, but the best crop is produced in the second year, and I consider forced plants give a more certain crop, heavier, with enough fine fruit for dessert, clearing them off the ground after they have fruited; or they may remain a second year, and will produce a good crop. If I had just a sufficient number of plants to turn out after forcing, I should plant runners as soon as they could be had, planting on well-trenched and highly manured ground, and I should not expect any fruit until the second year after planting. It would be well not to allow many runners, only taking those which are needed for stock, and such it would be well to peg either on pots filled with soil or in the ground, in order to insure their speedy rooting, removing all other runners as they form. In this way we have strong, well-ripened crowns. The ground being light, nothing that will go deeper than a hoe comes near the plants, and this only in autumn, before applying a good dressing of rather littersy manure—that is, not pointed-in in spring, but allowed to lie. The surface may be stirred if the weeds are troublesome, but not so deeply as to cut or disturb the roots. To afford runners for the forcing plants, runners should be planted every year. I like those best from one-year-old plants. I think they are stronger, and that is overcome by the potting. Were it not for that, the Strawberry with me would be an annual out of doors—that is to say, one year fruited in pots, and one year in the open ground. Convinced I am that here, and no doubt in other cold north-country places, the Strawberry must be grown one year at a loss, unless this plan be resorted to.

The kinds that do best are Sir Joseph Paxton, President, Sir Charles Napier, Dr. Hogg, and British Queen. I have only one other sort—Black Prince, which I shall discard. It will not bear fruit at all fine, either in the open ground or forced, and it is not earlier than Sir Joseph Paxton: it is worn-out with me. The kinds I force are those named above. All have fine large fruit, and I have no fault to find with any, only President is subject to "blight" or mildew, which it exhibits alike in as out-doors. To make up half a dozen, I think of adding Eleanor as a late kind, but should like a better, it being so acid; and yet I consider it better than either Elton or Frogmore Late Pine. Is there a better late kind than any of the three?

Respecting in-door fruits I have little to say, and may just say Grapes have, as a rule, coloured very badly. Melons, which are never so good as in a hot dry season, have not done well. I allude to dung beds, in which way, probably, more Melons are grown than any other. There is not much to be said of some new kinds I had this season. Paterson's Superb is a large, deeply-ribbed, and warted sort, with a rind very thick; flesh red, not very juicy, and of very poor flavour. As a curiosity, and to make persons stare, it may do, but setting aside its size and curious surface—similar to the Rock, it is of no use. Cox's Golden Gem is of a globular shape, and finely netted; colour of rind bright golden, very beautiful. The flesh is white, the rind very thin, the flavour high. It is

one of the very best of Melons, not of a monstrous size—usually over 2 lbs. weight, which I consider a fair size; and it is also a free setter. Gilbert's Victory of Bath is evidently a fine sort, yet in a frame over a dung bed it did not fruit well; notwithstanding, I have seen sufficient of it to put it down as one of the finest green-fleshed sorts, particularly for house culture. Williams's Paradise Gem is a moderate-sized fruit, scarlet-fleshed, and highly flavoured; a very free setter, perhaps the freest-setting of any, whilst it ripens its fruit in fewer days from setting than any other sort I know, and does not crack, or very little, which is more than can be said of the rest of the scarlet-fleshed kinds grown in dung beds. It is, however, small—too small, but for early work desirable. Had I to grow but one kind, it would be Cox's Golden Gem, then Beechwood, the round, netted sort; and I must confess to being at a loss for a scarlet-fleshed variety. Will any of your correspondents name a good sort—one that will not crack in a dung frame in a wet season?

As to Cucumbers, Cox's Volunteer beats all for prolific, early, and continued bearing, and uniform good quality.—G. ABBEY.

THE GLADIOLUS AND POTATO DISEASE.

YOUR correspondent, "D., Deal," in writing of the Gladiolus disease in your last, says, "I consider it analogous to the Potato disease; and the analogy is no way disturbed by the fact that we know nothing at all about it, for surely the letters that have appeared in the public papers show that we are as much at sea both with regard to the cause and remedy as we were when it first appeared." These words from such an experienced plant-grower, writer, and acute reasoner as "D., Deal," are perfectly surprising. The letters he refers to certainly prove the crass stupidity of the writers of the letters, but not that we (everyone) know nothing about the Potato disease, when anyone with a little common sense and a simple microscope may confirm the accuracy of the published statements and illustrations of Berkeley and others. Why does "D., Deal," associate the cause with the remedy in this way? I maintain that the cause is known, but it does not follow that the remedy is known also. A doctor may know that his patient is suffering from a severe attack of cholera morbus, but it does not follow that the doctor must be able to cure his patient. "D., Deal," says he considers the Potato and Gladiolus disease "analogous," yet that we "know nothing at all" about either. Perhaps he will tell us, therefore, on what basis he founds his analogy.—W. G. S.

ELECTION OF ROSES.

BRIEFLY in answer to "SÉNATEUR VAISSE," I cannot but think a reply to his questions as to colours far more difficult than mine. Mine are not perfect, I well know, and would have been better placed inversely—viz., fifty best Roses, underlining best twelve; 2nd, twelve best Teas or Noisettes; 3rd, best Rose, if restricted to one only. Of course, the meaning of the word "best" depends somewhat on the views of the person replying, but I apprehend most of us understand it to mean that we should prefer to keep the Roses we name to those we omit. Opinions would differ as to the merits of a single bloom, and, of course, they must differ over the value of the plants, especially when we take into account the likes and dislikes of persons, the differences of locality, soil, climate, &c. As Mr. Peach has remarked, few persons would agree as to colour, and if "SÉNATEUR VAISSE" has any really blue or black Roses I shall be glad of any plants he has to spare. Imperfect as the questions may be, yet the number of votes that each Rose obtains is certainly a measure of the estimation in which it is held, and it may be safely said that any Rose that receives two-thirds of the possible number of votes, or even half, is worthy of cultivation. I have already received about thirty replies. I propose closing the poll the last day of this month, and shall tabulate the results as soon as possible afterwards.—JOSEPH HINTON, Warminster.

P.S.—I have several catalogues by me, and as an example, Ferdinand de Lesseps is described in one as "purple shaded with violet," in another as "rich crimson finely shaded," in another as "dark crimson shaded with violet." Voting by colour, I apprehend, would not prove very much.

THE ICE PLANT.—I have in my garden, standing uninjured and unprotected, several plants of the common Ice Plant, and I think it equally remarkable that they are from self-sown

seeds from a plant which grew, flowered, and seeded in the same place in 1871 without the slightest protection being given to it. Though I always grow the Ice Plant, I have never known it to bloom in the open air, much less to bring seeds to perfection.—A. R., *Bromley, Kent*.

BENTHAMIA FRAGIFERA.

THIS noble-looking shrub was introduced from the East Indies in 1825, and named in honour of Mr. Bentham. It belongs to the natural order Cornaceæ, and is rendered more hardy when grafted on *Cornus sanguinea*, but even then it is doubtful whether it would thrive in the northern as it does in the southern counties of England. There is in the arboretum at Bicton a very handsome bush of it, which measures 12 feet in height and 45 feet in circumference. Although this *Benthamia* has been placed in an open exposure it appears to be quite at home, and is annually covered from bottom to summit with its tempting Strawberry-coloured fruit.

Few if any shrubs can bear comparison with *Benthamia fragifera* at this season, when well clothed in its attractive garb. It is vexatious, however, to find it is so seldom seen in full beauty. The fruit, which may be termed bitter-sweet, is greedily devoured by squirrels and other pests; perhaps it acts as a tonic, which appears to be the case if we may form a judgment from the quickness with which these quadrupeds get fat upon the fruit. The tree is readily propagated either by seeds, cuttings, or grafting.—ROBERT BEBBIE, *Bicton Gardens*.

THE CLEMATIS AND ITS CULTURE.

I THINK few plants have yielded such a glorious harvest to the hybridiser as this genus; indeed the only fear I have is, that we may be inundated with too many varieties, by which I mean too many differing in nothing but name. They are really grand plants, and what will interest my amateur readers most is the fact they are perfectly hardy, are equally adapted to the cottager's as to the duke's garden, and will grow with equal vigour in town and country; indeed for the last three years I have had many of these superb plants growing in my garden, which is within sight of St. Paul's, aye, and blooming most gorgeously. Clematis Jackmanni was a complete surprise to myself last year, for all the flowers were of an immense size, and nearly all had six petals instead of four, which adds in no small degree to its beauty.

It is as adjuncts to town gardens that I wish particularly to direct the amateur's attention to the hybrid Clematis, for in such positions they cannot fail to be seen and appreciated by everyone; and since it is the far-too-prevalent fashion of London builders to partition the small plots of grounds which are left to our suburban houses by walls, these should at once be covered to hide their ugliness. For this purpose I would thus proceed: First plant a quantity of the small-leaved Ivy or *Ampelopsis Veitchii*; either of these will attach themselves closely to the wall, and each will have distinct claims to the notice of plant-lovers. The *Ampelopsis* will clothe the wall with its deep green leaves, and in autumn the leaves will assume rich and brilliant shades of colour, but the wall will be left bare in winter; but in the case of the Ivy the wall will be clothed with green all the year round. Whichever be chosen, care must be taken to keep the plants pruned and trimmed-in close to the wall; over this covering the Clematis should be trained, and the rich green background will add materially to their beauty, and will quite cover the blank wall, which the leaves of the Clematis alone would not do.

The Clematis, however, need not be confined to the single purpose of covering walls, for they are equally adapted for covering a verandah porch or trelliswork; or they may be trained upon pillars and festooned together. In this way I have grown some dozen varieties in my London garden with great success. Again, for scrambling over ruins, the rookery, or rockwork, natural or artificial, they are excellent, and are equally at home. Another use to which they may be applied is for massing in large beds upon lawns, where they soon cover the soil, and with a little attention produce an astonishing effect. Indeed, I may sum-up their good qualities in similar words to those which I have used on a former occasion—they are perfectly hardy, quick in growth, require but little attention, are reasonable in price, and yield a profusion of large flowers of rich and varied hues, which continue in full perfection for several months.

To ensure success with these Clematises, plant them in a

mixture of good turfy loam, well-decomposed leaf mould, and some thoroughly decayed manure; let this compost be turned frequently with a spade to ensure its becoming thoroughly mixed, and about this time in the year I give a good mulching of manure and leaf mould. During the flowering season they enjoy occasional waterings with weak liquid manure.

Before giving a list of a few of the best Clematises which I have grown and which are deserving the attention of all amateurs, I would call the attention of my readers to the fact that there are two sections of Clematis, one producing their blooms upon the old, and the others upon the young wood. It will be easily understood, therefore, that if the old wood be pruned away from those plants belonging to the first-named section no bloom need be expected; therefore those kinds which flower upon the old or previous year's growth should receive only a slight pruning, and the operation is best performed in autumn. The second section should be pruned hard back late in autumn, in order to increase the surface of young wood. I append the names of a few in each section. Some of the last new ones I have not yet seen, and therefore I cannot speak of their qualities.

Section I.—BLOOMS PRODUCED UPON THE OLD WOOD.

Clematis Fortunei.—Large, double, pure white. A fine flower, produced during May, June, and July.

Azurea grandiflora.—Rich blue shaded with violet. It blooms from May to July.

Standishii.—Deep violet. Flowers in May and June.

Helene.—A fine white flower with pale yellow centre. Produced in May and June.

Sophie.—Mauve barred with straw. Fine flowers, produced in May and June.

Sophia flore-pleno.—Flowers double, white, shaded with mauve and yellow. May and June.

Regina.—Flowers large, pale mauve. Produced in May and June.

Section II.—BLOOMS PRODUCED UPON THE YOUNG WOOD.

Jackmanni.—Flowers deep violet, barred with red along the centre of each petal, very large and fine. Flowers from July to October.

Rubella.—Flowers large, rich claret. Produced from July to October.

Sieboldii.—Pale yellow or straw colour, light green centre. From end of June to October.

John Gould Veitch.—Flowers double, lavender. Blooms during the whole of summer.

Prince of Wales.—Flowers purplish violet, barred with red. Produced from July to October.

Lanuginosa.—Clear azure, very large. Flowers from the end of June to October.

Lanuginosa candida.—Pure white, large. Blooms from July to October.

Gem.—Rich blue. A very late bloomer.

Cerulea odorata.—Flowers small, sweet-scented, rich purple. Produced from June to September.

Lady Londesborough.—Flowers large, silvery grey, shaded with pink at the base of petals. June to October.

Albert Victor.—Large flowers, dark lavender faintly barred with brown. Produced from June to October.

Miss Bateman.—Pure white, petals barred with creamy white. Flowers from June to October.—EXPERTO CREDE.

STOCKS FOR ROSES.

It is seventeen years since I budded my first Rose on a two-year-old seedling Briar stock. It produced shoots 1 foot in length from the two buds inserted the same season. In the autumn it was taken to our cottage garden, where it remained two years, was afterwards sold, and when I saw it four years ago had a stem the thickness of a man's wrist, and a head 4 feet across. Being so successful with my first, in the following March I collected fifty more seedlings of good size from some neglected hedgerows and ditches, where the hedges had fallen from the bushes overhead, vegetated, and taken root in the soft earth and leaf mould beneath. The plants were easily brought away, planted, and worked in season with the best kinds of Roses then known. Many of these worked-stems are thriving to this day. For Roses as standards the bandy-like stocks often used are useless for durability and head growth, as the second year after planting they throw up suckers which are dormant eyes brought into activity by the root and head pruning. Cutting-off at the surface increases the number of these suckers; take them up, cut out the upright growers, rub out the eyes, and retain those stocks which are likely to form fibre and root, shortening to 1 foot from the stem—this adds to their durability in several ways; and I am sure Général

Jacqueminot, the Old White (Maiden's Blush), and Sweet Briar would make capital stocks.—C. P. G. H.

[Common Briar may do well on tenacious moisture-holding soils, but Manetti, Céline, and some others are more to be depended upon on usual garden soils for the growth of enduring specimens.—Eds.]

ROYAL HORTICULTURAL SOCIETY.

BIRMINGHAM MEETING, 1872.

A MEETING of the General Committee appointed to carry out the arrangements of the late Exhibition of the Royal Horticultural Society at Aston was held on Thursday last, at the Great Western Hotel, Birmingham. Mr. G. Wise presided; and there were also present Messrs. Jaffray, C. T. Parsons, J. Lowe, T. B. Wright, W. B. Mapplebeck, Dr. Barratt, E. Tonks, Tye, Vertegans, Hall, E. W. Badger (Hon. Sec.), Quilter, Hassall, Growtage, Hallam, Hopwood, G. Baker, and A. Forrest.

Telegrams apologising for non-attendance were received from the Marquis of Hertford and Earl Bradford, and letters from Col. Ratcliff, Messrs. C. M. Caldecott, Milward, J. Cartland, and W. Gardiner.

The following account of the Treasurer was presented:—

Dr.	RECEIPTS.	£	s.	d.
To Birmingham Rose Show.....		127	16	9
Subscribers' tickets.....		2507	0	6
Railway Companies for admission to passengers.....		36	7	1
Money taken at gates.....		2429	3	6
		£5100	7	10

Special Prize Fund:—

Birmingham Rose Show	4127	16	9	
Donations.....	924	16	6	
Bank, for interest on this fund	5	10	8	
				1058 3 6
Bank, for interest on general account.....				9 19 5
Faulkner, Lavatory Department.....				15 0 0
Sundries, per Secretary.....				3 15 0
Implement, &c., Department.....	4221	6	11	
Less amount paid to Mr. Unite for shedding.....	88	14	0	

Messrs. J. Carter & Co., for advertising on cover of schedule ..	8	8	0
	£6328	6	8

Cr.	PAYMENTS.	£	s.	d.
By laying-out Exhibition Ground, labour, &c.....		507	10	7
Restoration of Exhibition Ground.....		200	0	0
Hire of tents.....		485	6	0
Prizes.....	£1304	7	0	
„ Medals.....	105	9	0	
		1409	16	0
Judges' fees.....		119	14	0
Music.....		249	0	6
Printing and stationery.....		208	5	0
Advertising.....		253	9	8
Bill posting.....		47	6	0
Postages.....		65	14	4
Metropolitan and County Police.....		122	18	0
Expenses—collecting special prize fund, sale of tickets, &c.....		191	4	0
Gatekeepers, &c.....		39	10	2
Travelling expenses, lodging, board, &c., of Society's staff at Birmingham, &c.....		116	18	4
Expenses of luncheon, exhibitors' breakfasts, refreshments for volunteers and police, judges' luncheons, &c.....		149	7	2
Carriage of goods from London, parcels, &c.....		18	11	4
Sundry incidentals.....		63	4	0
Profit—One Moiety paid to Royal Horticultural Society.....	£1040	5	9½	
„ One Moiety paid to Mr. H. G. Quilter.....	1040	5	9½	
		2080	11	7
		£6328	6	8

November 15th, 1872.

JOHN LOWE, *Hon. Treasurer.*

Examined and compared with vouchers and found correct.

JAMES RICHARDS, *Assistant Secretary R.H.S.*

EDWARD W. BADGER, *Hon. Sec. Local Committee.*

HOWARD C. PARKES, *Public Accountant.*

On the motion of the CHAIRMAN, seconded by Mr. JAFFRAY, the account was received, and ordered to be entered on the minutes.

Votes of thanks were then passed to the Earl of Bradford for his valuable services as President of the Local Committee; to Mr. Lowe, for his efficient services as Treasurer; to the Chairman and other members of the various Sub-Committees for the satisfactory manner in which they discharged their numerous and onerous duties; to the gentlemen who officiated as Stewards; and to the gentlemen who undertook and so satisfactorily performed the laborious and trying duties of adjudicating on the merits of the boilers, horticultural buildings, implements, &c., exhibited at the Show.

The CHAIRMAN proposed, and Mr. T. B. WRIGHT seconded, a vote of thanks to Mr. E. W. Badger, for the very arduous and important services rendered by him as Honorary Secretary, and for his unwearied exertions to promote the success of the Exhibition.

Mr. JAFFRAY, in supporting the motion, said that in addition to the signal ability displayed by Mr. Badger in conducting all the matters connected with the Exhibition, the tact and temper with which he bore the annoyances showered upon him, partly from the inclemency of the weather, and partly from the inconsiderateness of the public generally, showed that he had also great self-command, which was not possessed by all.

The motion was cordially adopted.

Thanks were voted to Mr. B. A. Hallam for the valuable assistance rendered by him as Honorary Secretary to the implement department; and to Mr. A. Forrest for his careful attention to the duties of Secretary to the Committee.

Votes of thanks were also accorded to Mr. Hall for his liberality in granting the free use of rooms at the Great Western Hotel for the meetings of the Committee; to Mr. T. B. Thomson and other gentlemen who gratuitously undertook the sale of tickets; to Mr. B. Harlow, of Macclesfield, for supplying and fixing free of charge 1000 feet of hot-water pipes for the boiler trials; and to Mr. H. C. Parkes for his services as Auditor.

The CHAIRMAN then proposed "That the duties of this Committee being now finished, it be, and hereby is, dissolved."

Mr. T. B. WRIGHT seconded the motion, and suggested that the work of the Committee should be continued by the establishment of a Midland Counties Floricultural and Horticultural Society, to commence operations next year by holding one or two exhibitions, as might be considered desirable. There was a large and admirable ground in which to hold an exhibition, and he thought Mr. Quilter would be disposed to make liberal arrangements with such a Society. Everyone would admit that it was desirable to do more than had yet been done in the town with regard to horticulture, and he believed that in a little time they might establish one of the most flourishing societies in the kingdom.

A vote of thanks having been passed to the Chairman, Mr. QUILTER said that, in accordance with his promise, he should give £500, the half of his share of the profits, to the charities of the town. He proposed to make the division as follows:—General Hospital, £100; Queen's Hospital, £100; Sanatorium, £100; Dispensary, £25; Children's Hospital, £30; Lying-in Institute, £25; Eye Hospital, £25; Homeopathic Hospital, £50; Women's Hospital, £25; Orthopaedic Hospital, £10; Ear and Throat Infirmary, £10. He was happy to be in a position to give that sum to the local charities, because he was anxious that the visit of the Royal Horticultural Society should be beneficial to the town, and not result merely in his own aggrandisement and profit. He should also esteem it a pleasure to hand over the amount as he proposed, as some consideration for the many kindnesses he had received from the town and neighbourhood, and for the success which had attended his efforts.

Mr. Lowe said he was sure the town would receive the donations to the various charities in the spirit in which they were offered by Mr. Quilter. It was a noble act on the part of Mr. Quilter, who at the outset ran considerable risk of loss, and it was an example which others, after having reaped success in various ways, would do well to follow.

The Committee then separated.

It may interest some of our readers to have their attention drawn to the following particulars:—The amount collected for admission prior to the opening of the Show was about 60 per cent. of the entire receipts for admission. The expenditure may be thus classified:—

Laying-out Exhibition Ground, Tents, &c.....	20 per cent.
Prizes.....	24 „
Music, Police, and other Incidentals.....	17 „
Publicity.....	9 „
Profit.....	30 „

100

ROYAL BERKSHIRE ROOT SHOW.

For twenty-three years the Messrs. Sutton have held a root Show, for the purpose of enabling the general public to see what can be done by care and attention to the selection of seeds, and by diligence and skill on the part of cultivators. Both these are, I need not say, necessary to the production of first-rate produce. How often do growers lay the blame on seedsmen, and say, "We have not been supplied with good seeds," when the fault has been with themselves? While, on the other hand, no skill will avail if the seed supplied be of indifferent quality. The well-tried probity and integrity of the celebrated Berkshire firm are a sufficient guarantee on the latter point, and anyone at all sceptical can have their doubts at once removed by seeing the miscellaneous results exhibited at their Reading Show.

With a liberality that deserves all praise, the Messrs. Sutton award prizes at their root Show to the amount of nearly £80, the sole condition being that the exhibits should be from their own customers; and how wide and influential a range this gives them may be gathered from the fact that the following were some of those who competed on the present occasion:—Her Majesty the Queen, Barton Farm, Osborne, Norfolk Farm, Windsor, Bushey Park Farm, and the Royal Gardens, Windsor;

H.R.H. the Prince of Wales, H.R.H. the Princess Louise, the Duke of Wellington, the Marquis of Ailesbury, Marquis of Bristol, Hon. Mrs. Hay, Lord Calthorpe, Lord Ormathwaite, Sir Paul Hunter, Sir Charles Russell, Henry Allsopp, Esq., R. Attenborough, Esq., James Blyth, Esq., R. Allfrey, Esq., R. W. Hall Dare, Esq., William Joyce, Esq., Messrs. Hepburn and Son, Mrs. Morten, Messrs. Boxall, Cave, Ellis, W. Martin Tagg, S. Robinson, N. Stilgoe, J. Bulford, E. Humfrey, W. Looker, jun., R. Webb, W. J. Strange, and also that there were 420 exhibits. The Show was held in their new premises, one floor alone being 400 feet in length and 40 feet in width. The Judges were Messrs. Long, Binfield; Wilkins, Mortimer; Jenkin Davies, Englefield; Bell, gardener to the Duke of Wellington; Higgs, gardener to Miss Crawshaw; and Tegg, gardener to J. Walter, Esq., M.P., and they were occupied the whole of Friday in fulfilling their arduous task. It would be impossible for me to enter into the details of this remarkable Exhibition at the length that I could wish or that its merits entitle it to. Farmers will have an opportunity of seeing the most remarkable roots at the Smithfield Club Show, and horticulturists who have not seen it must rest satisfied with my assertion that at no metropolitan or provincial show have I seen finer collections of vegetables than those which were exhibited; but I will, nevertheless, select a few salient points, which may give an idea of its general excellence. The highest prize, a handsome silver cup, value ten guineas, was offered for twenty-four roots of Sutton's Improved Champion Swede. This was won by W. Bullen, Esq., Weyford, Crewkerne, with roots which were perfection for growth, the bulbs being large with small necks, and very symmetrical, for it must not be supposed that size is the one thing sought after, size without quality being of little value. Then what marvellous roots of Mangold Wurtzel were those of Sutton's Long Red Mammoth, exhibited by the Marquis of Ailesbury, Savernake, the twelve roots weighing 489 lbs., and several of them weighing 55 lbs. each. The Marquis of Ailesbury also took the first prize for Sutton's New Golden Tankard Mangold, a splendid variety, of which the flesh is yellow throughout instead of white, as in other Mangolds. For Sutton's Improved Green Kohl Rabi there was a very spirited competition with splendid roots, the first prize going to Mr. Joseph Cave. Her Most Gracious Majesty the Queen exhibited in this and in many other classes; the productions were highly commended. A very interesting feature of the Show was the exhibition for Potatoes, for which there were several classes. A prize was offered for Sutton's Red-skinned Flourball, and this brought together a large number of splendid specimens, showing the value of this Potato for size and quality, it having been stated by many growers and exhibitors to have been entirely free from disease in this year of such prevalent calamity to the noble tuber. There were also some excellent collections of Potatoes; and a remarkably handsome seedling round Potato from Mr. Bette-ridge, will, I think, be heard of by-and-by, as it looked exceedingly promising. There were some fine samples of Sutton's Improved Reading Onion, one of the very best keeping Onions we have. The white Turnips were an exhibition in themselves, so remarkably clean and well-shaped were they.

I wish that it were allowable for me to enter into a full description of the excellent manner in which all the arrangements of this admirable establishment are carried on; but I cannot omit to mention that they have a splendid lecture hall, capable of containing three hundred persons, and that each morning a Scripture-reader, who is entirely supported by the Messrs. Sutton, opens the day's proceedings with reading the Scriptures and prayer. Being there early I had the pleasure of being present at it, and could not but feel that in these days, when it is more popular to scoff and sneer at all outward demonstrations of religion, it was pleasurable to find a firm employing so large a number of men thus endeavouring to honour Him from whom all good things do come. A correspondent mentioned some time ago in the Journal that this was done at Mr. Robert Hanbury's, The Poles. It is gratifying to find that the good work is not confined to private gentlemen alone, and I am of those old-fashioned folk who believe that "He honoureth them who honour Him." They have also a reading-room for their young men, and have lately opened close to their premises a house, called "The British Workman," where their men can obtain coffee, &c., without the evils that too often accompany the public house.—LE ROI CAROTTE.

MESSRS. CARTER'S ROOT SHOW, CRYSTAL PALACE.

If Captain Gulliver wanted to give an account of the Brobding vegetable productions he would not now-a-days have to draw on his imagination, for the size which has been attained by the skill and intelligence of modern cultivators would have enabled him to take his measurements from actual sight, and not from fancy. Imagine Mangold Wurtzel 2½ feet long and 50 lbs. in weight; Swedes bigger than Daniel Lambert's head; Onions which might do for playing bowls with, &c.; for all such

might be seen at the Root Show held by Messrs. Carter & Co., the celebrated seedsmen of Holborn, at the Crystal Palace on Friday and Saturday last. For some years the firm has been in the habit of holding an exhibition on their extensive premises at Holborn of roots grown from seed supplied by them, and of offering a large sum in prizes for competition; but as the numbers sent in have gradually so increased that there has ceased to be sufficient accommodation for them there, they determined this year on transferring it to the Crystal Palace. The Exhibition was held on the eminence leading to the principal dining rooms on the south side of the building. Tables had been arranged down the centre of the space and on each side, and these were all filled with a fine collection of roots of Turnips, Swedes, Mangold Wurtzel, Carrots, Parsnips, &c. There were twenty-three classes, and the exhibitors were from all parts of the country; indeed Ireland furnished a contingent also, one exhibitor being from Bandon in the county of Cork. Among the classes were some for Carter's Imperial Swede. For this there were fifty-six entries, the first prize being won by I. Jackson, Esq., with some beautifully formed, not-over-large roots. Class 2, Any kind of Swede, the first prize was awarded to W. Rose, Esq., for Carter's Purple-top Swede. The third class was for white Turnips, in which there were no less than sixteen entries; the first went to R. Tanner, Esq., of Dorrington. Class 4, for Grey Stone Turnip, the prize was awarded to Mr. Gosling. Class 5, Carter's Imperial Green Globe Turnip to Mr. Crote, Littlehampton. Class 7, Carter's Long Red Mangold—in this the first prize was awarded to J. Ensor, Esq. In Carter's Long Yellow the first was taken by Messrs. Hepburn & Son, Dartford. In Class 11, Carter's Yellow Globe Mangold, some fine roots were shown by Messrs. Ensor, Beaufort, & Brown. In Class 12, for Carter's Red Globe Mangold, Mr. Sexton was first; and in Class 13, for Intermediate Mangolds, Messrs. Hepburn & Son were again first. There was a very fine collection of Naseby Mammoth Onion, which promises to be a very valuable variety. No prizes were offered for Potatoes, but Messrs. Carter & Son put up a large collection of eighty sorts, amongst which I noticed Carter's Main Crop, Dorrington Hero, Early Emperor, Bresee's Climax, Prolific, and other American varieties, Haigh Kidney, Prince of Wales, and Lapstone.

Exhibitions like these show the enterprise of our leading firms; and it cannot but be a matter of congratulation that the general public have thus a better opportunity of seeing the result of modern intelligence and skill than when the Show was held more privately; and we fancy that many of the visitors to the Crystal Palace on the two days on which the Show was held must have been considerably surprised at the display made, so creditable to the Messrs. Carter who supplied the seeds and the growers who grew them. The Judges were Mr. Higgs, gardener to Miss Crawshaw, Caversham Park, and Mr. Brebner, steward at Her Majesty's Norfolk farm.—T. X.

EMISSION OF LIGHT FROM FLOWERS.—A young Swedish damsel, the daughter of the great Linnaeus, was fond of amusing herself in the summer twilight by setting fire to the inflammable atmosphere which envelopes the essential-oil glands of certain *Fraxinellæ*: and one sultry summer evening when seated in the garden, she was surprised to see luminous radiations emitted by the flowers of a group of *Nasturtiums*; and she witnessed the same spectacle on several subsequent evenings, in June and July, 1762. Several naturalists have observed the same phenomenon, and almost exclusively upon yellow or orange-coloured flowers—such as the Sunflower, Poppies, the Marigold, and the Orange Lily.

Two interesting observations of such luminous flowers are thus described by Dr. Phipson:—"The Swedish naturalist, Professor Haggren, perceived, one evening, a faint flash of light dart repeatedly from a Marigold. Surprised at such an uncommon appearance, he resolved to examine it with attention; and to be assured that it was no deception, he placed a man near him, with orders to make a signal when he observed the light. They both saw it constantly at the same moment. The light was most brilliant upon Marigolds of an orange or flame colour; but scarcely visible upon pale ones. The flash was frequently seen on the same flower two or three times in quick succession, but more commonly at intervals of several minutes. When several flowers, in the same place, emitted their light together, it could be seen at a considerable distance. This phenomenon was remarked in July and August, at sunset, and for half an hour, when the sky was clear; but after a rainy day, or when the air was loaded with vapours, nothing of it was to be seen.

"On the 18th of June, 1857, about ten o'clock in the evening, M. Th. Fries, the well-known Swedish botanist, whilst walking alone in the Botanic Garden at Upsal, remarked a group of Poppies (*Papaver orientale*), in which three or four flowers

emitted little flashes of light. Forewarned as he was by a knowledge that such things had been observed by others, he could not help believing that he was suffering from an optical illusion. However, the flashes continued showing themselves from time to time during three-quarters of an hour. M. Fries was thus forced to believe that what he saw was real. The next day, observing the same phenomenon to recur at about the same hour, he conducted to the place a person entirely ignorant that such a manifestation of light had ever been witnessed in the vegetable world; and without relating anything concerning it, he brought his companion before the group of Poppies. The latter observer was soon in raptures of astonishment and admiration. Many other persons were then led to the same spot, some of whom immediately remarked that 'the flowers were throwing out flames.' As will be observed from the above instances, the emission of light from flowers occurs chiefly in the months of June and July, and during the twilight—between sunset and the time when full darkness sets in. In some cases these sparks or flashes have also been observed in the morning, just before sunrise. The phenomenon is always most brilliant before a thunderstorm. It is also said that some flowers always emit light at the periods of floration and fecundation; at which periods, as has lately been found, the temperature of the petals rises above the ordinary point.—(*Belgravia*.)

FUCHSIA SUNRAY (MILNER).—Thinking it might be of service to some of your readers to have such a beautiful plant as the above recommended to their favourable notice, I forward a specimen of its shoots, and venture to ask you to endorse the very favourable opinion I entertain of its merits as a decorative plant.—**ROBERT HATHERSTONE.**

[It is very beautiful; petals, sepals, and leaves all crimson.—**EDS.**]

NOTES AND GLEANINGS.

A LARGE consignment of the handsome *LILLIUM WASHINGTONIANUM* has reached this country, and we understand will be sold at Stevens's rooms, Covent Garden, on the 5th of December. A quantity of other rare Lilies will also be brought to the hammer on the same day.

— THE communication we publish to-day relative to the power some stocks have to prevent the occurrence of American blight on Apple trees is of great interest, and entitles the sanitary influence of the stock to more consideration than it has hitherto received. In America some kinds of Grape Vines are said not to be liable to be attacked by the *Phylloxera*.

— THE following is the account of the way in which Dr. Welwitsch, to whose death we recently made a reference, has bequeathed his collections:—He directs that his study copy of African plants (except one set of Mosses which he leaves to M. Duby, of Geneva) be offered to the British Museum, at the price of £2 10s. per hundred species; to the Portuguese Government he bequeaths two sets of his African plants, gratis; and to Dr. Schweinfurth, Professor A. Decandolle, the Academy at Lisbon, the Museum at Carinthia in Austria, the Imperial Natural History Museum at Rio de Janeiro, the English Government for the use of Kew Gardens, and to the botanical museums of Paris, Berlin, Vienna, and Copenhagen one set each, gratis. To the Zoological Museum at Lisbon he bequeaths his study copy of his African entomological collection, first choice of African mollusca, and all his books, instruments, and zoological objects; to Dr. Peters, of Berlin, and to the Museum at Carinthia, he also bequeaths one set each of his African coleoptera and mollusca; his general herbarium and his Portuguese herbarium he leaves to the Royal Academy of Sciences at Lisbon. The testator expresses a desire that all these gifts should be considered as being made by the Portuguese Government, through whose liberality and assistance he was enabled to make such collections.

PERMANENCY OF CONCRETE WORK.

IN reference to an article by Mr. T. Record in your number of November 14th on wiring (concrete) garden walls, in which is expressed a doubt whether concrete walls will stand the severe test of winter, I beg to say that if the cement and gravel be good, properly compounded and used, they will stand the weather as well as good brick walls or most hard building stones, and better than a great many of the present day; but

there are two necessities—viz., good materials and workmanship, and I may add a third—the facing must be carefully done, otherwise it will scale-off in time from imperfect adhesion. I have for nearly forty years used the cement concrete, though not for garden walls, but for wall copings and more difficult purposes, wholesale ever since Portland cement was introduced, and with other cements before; the coping being the most exposed and likely to be injured first. To anyone wishing to see an example, as one of a hundred I mention the front wall of the churchyard, Broxbourne, and the coping on the church itself, buttress tops, &c.

A stronger test is its use for concrete around lakes or streams, fountains, basins, &c., where, between air and water, only the hardest of stone or bricks will stand; the cement concrete remains quite perfect, and that as long as the cement has been in use. I have known cracks through the joints in consequence of the imperfect making-up of the banks and the ground settling, but not through the cement itself giving way, only when done in frosty weather, which it should not be. But all this requires experience to be managed successfully. Another severe test is to be found in open stableyards, terraces, and garden steps, which have been done and can be seen. Where stone is too expensive, I have used concrete for water-work purposes, and in forming rocks artificially, which are, of course, exposed to alternate wet, drought, and frost, and this in hundreds of cases—for instance, the waterfalls and other rocks in the beautiful park at Battersea, the earliest portion of which may be seen covered with lichen and other vegetation; and there also may be seen the bed of a stream concreted with Portland cement.

I may add that good lias lime and gravel well executed, and with a bold projecting coping faced properly with good Portland cement, will also answer well if done in favourable weather, but should be thicker than if done in cement.

This communication may savour of self-praise, but anyone may see a proof of its accuracy, and I do not undertake garden walls, having enough to do without such heavy work.—**JAMES PULHAM, Broxbourne.**

HISTORY OF COVENT GARDEN MARKET.

No. 1.

THE name of Thorney was in very early times applied to a marshy piece of ground, because overgrown with Briars, that is now known as "Westminster," because the Abbey is westward of London city. That Abbey was founded by one Sebert, who, whether he was a royal nephew or a London magistrate in the time of the Anglo-Saxon King Ethelbert, our authorities do not agree. But what can that Abbey have to do with Covent Garden Market? Much, as I will show if you will allow me to tell my tale after my own humour.

The earliest charters in the Abbey's archives are dated in the tenth century, which is quite early enough for my purpose; for though some are probably forgeries, there is one at least which appears genuine.

These charters and other documents reveal the numerous and very large estates possessed by the Abbey, and on one of them, most convenient from its nearness, the monks established a garden. Its situation and other particulars are revealed to us when, in 1537, being the twenty-eighth year of his reign, Henry VIII. obtained, in exchange for some lands in Berkshire, from William Boston, Abbot of St. Peter's, Westminster, "all that garden lying and being next Charing Cross, called Covent Garden, and also seven acres of land lying without the said garden, near and adjoining to the same, in the parish of St. Martin-in-the-Fields, valued by the said Abbot at the yearly value of £5. 6s. 8d." This garden and seven acres remained among the Crown estates until the reign of Edward VI., who bestowed it on his unworthy uncle the Protector Somerset, but reverting to the Crown on his attainer, the same king granted it in 1552 to John Russell, Earl of Bedford, who was then the keeper of the privy seal. In the deed it is described as "the Covent or Convent Garden," and it is stated that the seven acres were "called Long Acre," a name still retained, and that the annual value was £6 6s. 8d. The Earl soon after erected upon the land a house, principally of wood, for his town residence. It was named Bedford House, and was near the bottom of the present Southampton Street. It had a large garden, enclosed by a brick wall, extending nearly to the present market square. The remainder of the ground, as shown by a map now before me, drawn in 1578,

was divided into pastures, with two or three small houses in their corners.

Sir William Cecil had his house built by Sir Thomas Palmer in Edward VI.'s reign, where the parsonage of St. Martin's now stands, in the High Street, at the south end of Drury Lane. It adjoined the Earl of Bedford's property, and had an orchard adjoining the Covent Garden enclosure, of which Sir William had on lease a portion enclosed by "stulpes and rails of wood." *Stulp* is a word still used in Norfolk, and means a low post fixed as a boundary. By an indenture made September 7th, 1570, being in the reign of Queen Elizabeth, the Earl of Bedford "to fermeletton" to Sir William Cecil for twenty-one years a parcel at the east end of the enclosure or pasture called Covent Garden; and besides other boundaries it had "on the west end towards the south the orcharde wall of the said Sir William Cecyll." The rent was 5s., to be paid "yerelye at the feast of St. Mychaell th' archangell."

In 1631 Francis fourth Earl of Bedford, having completed his great work of draining the Lincolnshire fens, decided on improving his "piece of pasture land called Covent Garden." He obtained the aid of Inigo Jones, who planned and erected the church and a piazza square, which became the Belgravia of Charles I.'s time. We have the lease granted to Sir Edward Verney, Knight Marshall to Charles I. Gardens are specified as included in the lease, but "the portico walke" is excepted, that being for public use. The lease, executed in 1634, was for four years, and the rent "one hundred and threescore pounds." That house is now the Bedford Hotel and Coffee House, at the corner of Great Russell Street. In 1631 the Earl of Bedford, also by lease dated from his house in the Strand, granted to Edward Palmer and others for thirty-four years "that part of the Earl's pasture called Covent Garden and Long Acre." This was a cause of great annoyance, the lessees sub-letting, and erecting small houses; but in the year 1634-5, authorised by the Privy Council, the Earl of Bedford cleared away those small houses, employed Inigo Jones as his architect, laid out streets, built the houses, and about the centre set out a square, or, rather, oblong, 500 feet in length and 400 feet in breadth, and erected around it a piazza and residences for "the dwelling of persons of repute and quality." The square was "kept well gravelled for the accommodation of people walking there," and in the centre "a curious sun-dial;" but this dial was not placed until 1688, and was removed about 1792. In 1720, on the south side next Bedford House garden, there was "a small grotto of trees;" and, says Strype, "In this side there is kept a market for fruits, herbs, roots, and flowers every Tuesday, Thursday, and Saturday, which is grown to a considerable account, and well served with choice goods, which makes it much resorted to."

Bedford House, however, had now become unsuitable for a nobleman's town residence, and Maitland, writing in 1739, states that Southampton and Tavistock Streets being constructed on the site of Bedford House and garden, the market was removed further into the square, which proved so offensive to the inhabitants of the stately residences around it, that "instead of being inhabited by persons of the greatest distinction as formerly, they are now obliged to take up with vintners, coffeemen, and other such inhabitants; and in the magnificent square, to its great disgrace, is kept an herb and fruit market." Long previously—namely, by a grant from Charles II., the Earl of Bedford was empowered to hold a market in Covent Garden, and to receive the accustomed tolls. That such a market was greatly needed there is ample evidence; but before proceeding to details let it be remembered that the name "Covent" is not a corruption of the word convent, but was derived from the French *couvent*. The only corruption to which the name has been subjected is that mentioned by Maitland in 1739—namely, "Common Garden."

In 1845, during Edward III.'s reign, "the gardeners of the earls, barons, and bishops, and of the citizens," petitioned the Lord Mayor that they, "the said gardeners, may stand in peace in the same place where they have been wont in times of old, in front of the church of St. Austin, at the side of the gate of St. Paul's churchyard, there to sell the garden produce of their said masters, and make their profit as heretofore." But the Lord Mayor answered that the place aforesaid "is such a nuisance to the priests who are singing matins and mass in the church of St. Austin, as also to others, as well as to persons dwelling in houses there, who by the scurrility, clamour, and nuisance of the gardeners and their servants there selling pods, Cherries, vegetables, and other wares to

their trade belonging," that henceforth they must stand and sell their goods "between the south gate of the churchyard of the said church and the garden wall of the Black Friars at Baynard's Castle." This continued until 1661, when by an order of the authorities, "The market that was kept in St. Paul's Churchyard was removed into Aldersgate Street, in regard the bishops were very much against that market because it was kept in a churchyard." Besides that in Aldersgate Street, we read that in Leadenhall Market not only flesh, fowl, and fish were sold, but also "herbage in abundance for furnishing this great city;" also that "a market was in Gracious (Gracechurch) Street for herbs," and that Stocks Market was "much resorted to by the greengrocers for the furnishing of their shops or stalls in other markets." Stocks Market took its name from a pair of stocks for the punishment of offenders erected there in 1281. It was the chief market of the city during several centuries, but was abolished, and the Mansion House stands on a part of its area.

The lease of the first recognised Covent Garden Market was granted in 1677, being the twenty-ninth year of Charles II.'s reign, by the Earl of Bedford, afterwards the first Duke, and father of the celebrated Lord William Russell, to "Adam Pigott and James Allen, citizens and cutlers of London." The market was "to be held every day in the week, except Sunday and the feast day of the birth of our Lord, for buying and selling of all manner of fruits, flowers, roots, and herbs whatsoever; and also liberty to build and make cellars and shops, so as in such buildings no chimneys or tunnels be made or put, and so as all such shops shall be made uniform in roofs and fronts; together with all tolls, customs, stallage, pittance, and all other profits. The said market to be kept without the rails there, and the market people to sit in order between the said rails and the garden wall of Bedford House, from the one end to the other end thereof, and on each other outside of the said rails; and all carts brought to the said market to be placed close to the said rails, and at the east and west ends thereof." The lease was for one-and-twenty years, "at the yearly rent of fourscore pounds of lawful money of England."

The lessees built shops "all along the said garden wall, and also two shops against the banqueting-houses of Bedford House garden," also cellars under some, and the whole of the roofs were covered with slates. They then surrendered the said lease in 1678, and had another granted upon similar terms for twenty-six years to the same Adam Pigott and Thomas Day, to whom James Allen's interest had "lawfully come." The lessees were bound also to have a free roadway left, and to sweep up and carry away all "dirt and filth," so that "the same may be no annoyance either to the market people or others thither resorting."

In 1679 the churchwardens' accounts of St. Paul's church show that the market was rated for the relief of the poor for the first time. There were twenty-three salesmen, some rated at 1s., and others at 2s.

The market remained in this state in 1740, when Hogarth made of it at least two drawings. In one, entitled "Morning," the only part that is permissible for me to notice in these columns is that vegetables were in heaps, and a coffee-shop permanently erected directly in front of St. Paul's church. In another picture the vegetables and fruits were similarly exposed to sale, although there were stalls around the railing, and one prominent figure in the centre, with vegetables before her, was a well-known woman, nicknamed "The Duchess." The customs of the time are illustrated by Lady Archer being there with two maids and a footboy marketing. Her husband, Lord Archer, lived in the house that is now Evans's Hotel, at the north-west corner of the market, and where previously lived the celebrated Admiral, Earl of Orford, victor in the battle of La Hogue. George Carpenter, with a pile of empty Cherry sieves on his head, is also portrayed. He was employed to carry them to the water side, and had acquired the knack of placing twenty-four half-sieves on his head, and could shake off any number of them required without the remainder falling. Subsequently he became landlord of "The Finish," a notorious night house, and succeeded Mr. Gyfford, the brewer, as lessee of the market, paying the Duke of Bedford the yearly rent of £1400.

Another painting of Covent Garden Market is by Joseph Vanaken. It is in the possession of the Marquis of Bute, as is its companion picture of Stocks Market. It was painted in 1745, and the engraving which accompanies these notes is taken from that picture.

Even when that was painted, and when Gay wrote his

"Trivial," it will be seen that the centre of Covent Garden Market was an open space: the poet says—

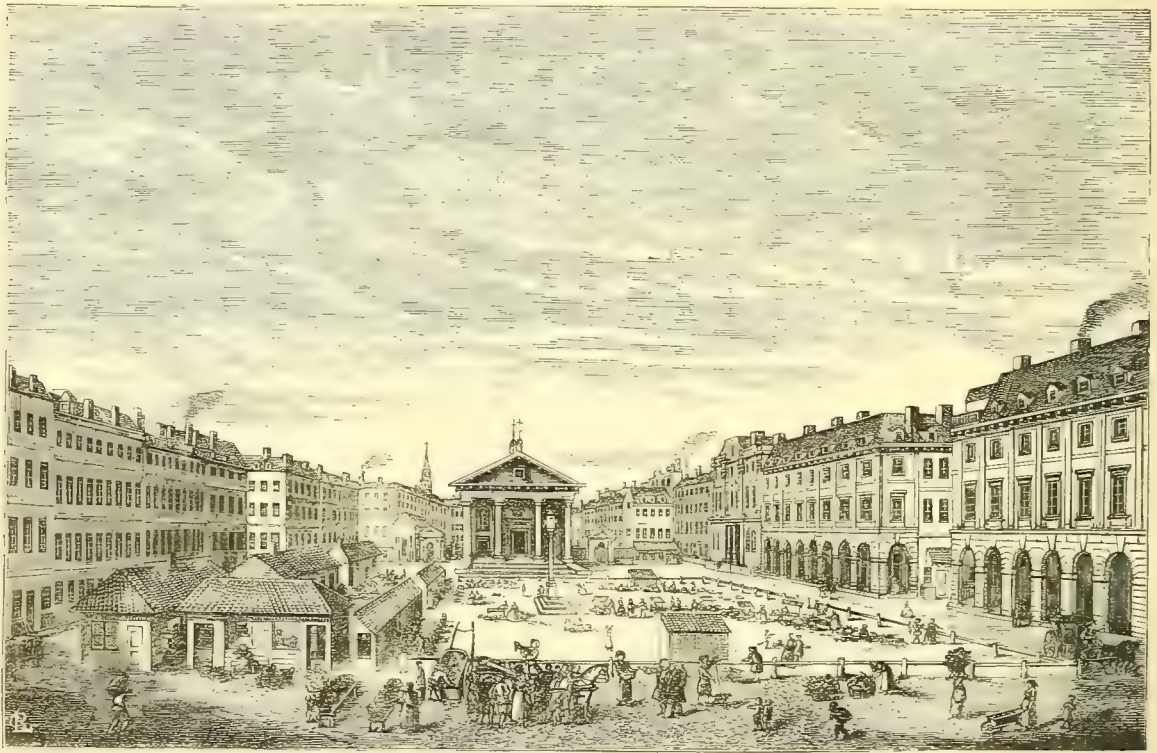
"Here oft my course I bend, when lo! from far
I spy the furies of the foot-ball war.
The 'prentice quits his shop to join the crew,
Encreasing crouds the flying game pursue."

That pastime, however, could not be pursued during the market hours, for then, as represented in the engraving, stalls and heaps of vegetables were spread about within the enclosure. The woman seated by the side of her shed, *a*, is Moll King. Mr. Staice, who knew Covent Garden in the middle of the last century, remembered Moll King and her mere shed of a tavern. "Noblemen and others, after leaving Court, would go thither in full dress, with swords and bags, and in rich brocaded silk

coats, and walked and conversed with persons of every description. Moll would serve chimney-sweepers, gardeners, and the market people in common with her lords."

Another character, notorious at the time, is also represented in the engraving. There were at that period more than two hundred advertising quack doctors, and this was one of them—Dr. Rock, *b*. He is standing up in his one-horse chaise, addressing the surrounds upon the efficacy of his "drops." He lived on Ludgate Hill, and charged 6s. for each bottle of that medicine, 3s. 6d. for each bottle of his "Elixir" and "Tincture," remedies for disorders too well known in the vicinity.

Miserable as were the arrangements of the market, yet even then from its stalls came the best of our garden productions,



a, Moll King.

COVENT GARDEN MARKET IN 1745.

b. Dr. Rock.

for it is told in Gay's poem, when detailing the specialities of each market,

"Would'st thou with mighty beef augment thy meal?
Seek Leadenhall; St. James's sends the veal;
Thames Street gives cheeses; Covent Garden fruits;
Moorfields old books, and Monmouth Street old suits."

Northouck, writing in 1773, says "it is the greatest market for greens, fruits, and flowers in the metropolis," yet the arrangements both for vendors and purchasers were still most defective. Malcolm, in 1807, observed that "the market is a

filthy scene, soiled by putrid refuse, leaves of Cabbages, shells of peas, and roots, the air of which is impregnated with a stench that is wafted in every direction by the wind; and yet the centre walk has many attractions for the botanist and epicure, who may there feast their eyes and their appetites with rare and beautiful flowers and rich fruits—but not at the cheapest rates. In 1758 the Bedford family leased this market for £1400 per annum, which is now (1807) let for a still greater sum;" yet the wretched arrangements remained for more than twenty years longer.—G.

BELGIAN HORTICULTURE.—VAN GEERT'S, ANTWERP.—No. 1.

A LINGERING illness of some months' duration rendered a change of air, of scene, of everything, absolutely necessary. That the change might be as complete as possible, and that it might embrace a sea passage of twenty to thirty hours, a considerate employer suggested a trip to the celebrated Ghent nurseries, and placed at my disposal the time necessary, and important "help by the way," enabling me to carry the proposal into effect. Another good friend—a friend to all gardeners who make themselves worthy of his friendship—Dr. Hogg, gave me valuable aid to the presence of the world-renowned horticulturists of this part of the Continent, and ready access to their interesting establishments. In consideration of the pleasure I experienced, and as a thank-offering for

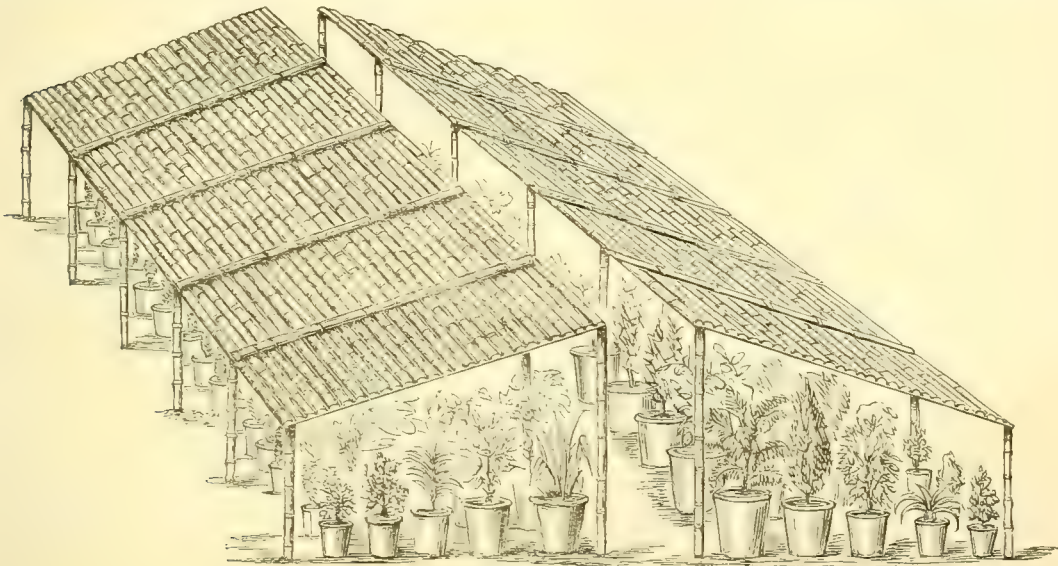
the benefits received, I attempt a notice, necessarily feeble, of a few things which arrested my attention, and which may not be unacceptable to at least a portion of the readers of the Journal.

Failing a steamer direct to Ghent, and the Antwerp route offering advantages, I decided to land at that prosperous, quaint, and celebrated old city—a city of immense commerce, magnificent churches, curious architectural ornamentation, twisting streets, with odious pavement, and, what is at once striking, no smoke! But horticulture is the theme, and I find myself at the nursery of Mr. Charles Van Geert. This establishment shall have the first notice, because it was the first visited, and because the proprietor belongs to one of the

oldest families of continental horticulturists, dating back several generations. Mr. Van Geert is approaching the sere and yellow leaf, but he has a talented successor in his son, well known and appreciated by his ready aid and genial manner when, after leaving the university, he buckled to work in the celebrated nursery of Messrs. Veitch, of Chelsea. This little incident is evidence of the earnestness with which horticulture is prosecuted by the Van Geerts, and tells us once again that an honourable university course is not incompatible with hard work. Mr. Van Geert, jun., is now preparing himself, after extensive travels, to settle down, with a well-stored fund of knowledge, to the old business at home, to perpetuate its fame and name to future generations.

This, unlike some other continental nurseries, does not contain a "sea of glass" and all that is rich and rare in tropical vegetation; neither does it—and this is a feature common to

them all—present any outward show of grandeur to make an impression on the mind of visitors. Utility rather than mere show is the predominant feature of the establishment. The great characteristic of the nursery is its fine collection of hardy plants, trees, ornamental and fruit-bearing, shrubs, and Conifers. The only glass structures are a splendid vinery, orangery, and a long range of plain span-roofs. These are principally employed for wintering Camellias, Azaleas, Ferns, Palms, and other half-hardy ornamental subjects located in the open air—or in what I will call, for want of a better name, Van Geert's wigwams—during the summer. These erections are homely, but the health of the endless variety of plants beneath their shade proves them to be excellently adapted to their purpose. They are found better than glass in being cool, and better than canvas, inasmuch as while they exclude the sun they admit the rain. They are simply sheds on posts, with a



Van Geert's Sun Protection.

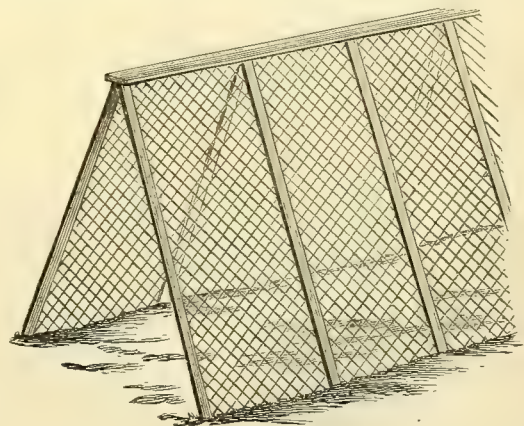
covering of split bamboo canes—deal laths would do as well. The canes are arranged longitudinally, and are put together with stout string, leaving interstices between each cane of a quarter or half an inch, formed by the twist or knot of the string between cane and cane. They are rolled-up in lengths, and taken in during winter. They last for years. Mr. Van Geert spoke highly of them, as indeed well he may, for they evidently serve him well. The accompanying rough sketch of the wigwams will give an idea of what they are like. The open path between the lean-to's affords easy access to the plants.

In gardens destitute of shade, simple erections, such as that figured, would be invaluable for the growth and protection of many plants to which bright sunlight and heat are detrimental.

On first entering the nursery we are at once in the midst of a large number of oblong beds occupied by hardy perennials and kindred subjects, comprising almost everything that can be mentioned in the way of out-door decorative plants. Phloxes, one of the finest and most useful classes of hardy plants extant, stood out prominently, the colours of a number of seedlings being particularly brilliant. Chrysanthemums in full bloom September 14th, and some of them over, were distinct by their precocity—a valuable quality; but in point of intrinsic excellence they were not superior to the general average of the order, still their earliness is an advantage not to be lost sight of. In these beds were Yuccas in exceedingly fine order and variety, and Hydrangeas are evidently in great request by the large stock provided. The fine crowns of flowers of many of the varieties were very imposing, one—*paniculata grandiflora*—standing out proudly. This variety is free-growing and floriferous, and apparently as hardy as the Oak, not an inch of wood being injured during last winter, which was one of the most severe on record.

I must, however, leave these beds, just noticing one feature as giving an outline idea of what may be carried out more

fully, and which may assist to make, especially little suburban and town plots, more interesting. At the ends of one range of beds is a miniature hardy aquarium—I mean one in each bed. It is simply the half of a paraffin cask sunk to the level of the ground and filled with water. These tubs were occupied



Van Geert's Trellis.

with named collections of hardy aquatics, and by their evident health would quickly establish themselves. Around the tubs were Ferns and sub-aquatics. It is easy to see that by a little rockwork and suitable plants a pleasing variety may be provided in any garden, however small, by working out, according to taste, this simple idea. The only thing required to keep the water pure and the plants healthy is to pour in a painful

every morning and let it flush over the sides. Contiguous to these beds were collections of American plants and Rhododendrons, and an exceedingly fine lot of *Magnolia Lenné*. Plants of this fine variety were just bursting their second lot of crimson flowers with which they had previously during the summer been covered, although only 3 to 4 feet high.

In shrubs Van Geert is famous, and especially so in an extensive variety with variegated foliage. The collection of Boxes, from the clearly laced Japanese sorts 3 inches high to well-finished specimens, are especially attractive. This class of shrubs Van Geert considers are worthy of every attention. Being exceptionally hardy, and removable at any season, with an infinite variety of form and colour, they have claims for special notice by this combination of qualities. Hollies, too, are in extensive variety and carefully tended. The variety of Yews is also choice, a new gold-laced weeping variety, *Taxus Dovastonii aurea*, being distinct and fine. This variety is being grafted on stocks to be trained, or it will rather grow itself, umbrella fashion. It is not yet in commerce, but is one of the good things to come.

Besides the variegated forms of shrubs and Conifers, there is a splendid collection of hardy deciduous trees and shrubs of varied habit, form, and colour—this, perhaps, after all, is Van Geert's speciality—Ashes, Oaks, Elms, Limes, Walnuts, Chestnuts; indeed everything—weeping, Fern-leaved, and beautifully variegated. There is no longer any excuse that shrubby plantations shall continue to wave in a dull monotonous green. The Japanese Oaks, especially *Quercus Daimio*, give noble foliage. Of less noble growth are the beautiful *Rhus laciniata*, *Castania asplenifolia*, *Cornus* in variety; *Sibirica variegata*, with its silver-margined foliage, red wood, and berries, standing conspicuous; the variegated Maple looking dingy in comparison.

But I must just step into the fruit-tree department, not to say anything about the capital stock of trees, but to notice a useful trellis. This is one of Van Geert's creations, and may be useful in other places where walls are scarce. It is the essence of simplicity. It is strong, cheap, and durable. The original has been in use ten years, and is as strong and sound as ever, but the poles had been boiled in creosote. Two rows of poles are fixed in the ground about 4 feet apart; they meet at the top, 9 or 10 feet high, along which runs a strip of deal as a coping nailed into the top of each pole. Struts or stays at each end make a framework as firm as a rock. A covering of galvanised wire netting, 6-inch mesh, furnishes the trellis. It serves its purpose well. With iron uprights in stone bases it would be imperishable.

My visit to this place was an enjoyable one. The establishment is not large, but in good order, and hardly a weed to be seen. Van Geert's larger nursery is a distance from the city: by what I heard of its contents and their mode of arrangement, it would have been specially worthy a visit, but time and trains were inexorable, and I had to push on to Brussels. I must, however, record my acknowledgments to Mr. Van Geert for his cordial reception and genial instructive converse, as also for the assistance he rendered in aiding a visit to the museum, fine little park, and other attractions of antique Antwerp.—J. WRIGHT.

WORK FOR THE WEEK.

KITCHEN GARDEN.

As has been recommended, take advantage of frosty weather to get manure wheeled on spare ground, and see to getting a good supply well rotted and fit for use when wanted. Trench, dig, and ridge every spare inch of ground whenever the weather will permit these operations to be advantageously performed. This is particularly to be observed in gardens, the soil of which is of a clayey nature. Look over root-stores occasionally to see that nothing is going wrong, and be very careful of any *Broccoli* that may be fit for use or turning-in. Endeavour as far as circumstances will permit to have a good supply of *Parsley* under safe protection, for there is generally a large demand for this, and in the event of a severe winter it is difficult to save it by the ordinary protection of hoops and mats. *Cauliflowers* and *Lettuces*, &c., in frames should be freely exposed on all favourable occasions. See to maintaining a regular supply of *Sea-kale* and *Rhubarb*, and other forced vegetables for which it is likely there may be a considerable demand.

FRUIT GARDEN.

It is always desirable to get as much of the pruning and nailing done before the approach of spring as possible; lose no favourable opportunity, therefore, of forwarding these operations, for besides the advantage of having that kind of work done

before the busy season, the garden will present a much neater appearance after the wall trees are nailed, the borders made trim, the small fruit-bearing bushes pruned, and the ground among them turned over. See that any of the standard trees which have been recently moved or root-pruned are firmly secured against injury from winds, and also get any root-pruning or transplanting remaining to be done this season executed as soon as possible.

FLOWER GARDEN.

Tender kinds of Roses are found in some places to be injured by the early frosts, protection should therefore be applied at once to such plants as are yet safe. Also get the stock of Briars for budding upon next year without delay, for unless they are planted before spring they seldom furnish strong shoots for early budding. Many object to planting shrubs or trees in winter, believing that the roots if hurt at that season are liable to die, and certainly early in autumn is a preferable season; but with weather like the present I would not delay such work a single day, and if the soil is properly prepared by draining, &c., where necessary, as should always be done before planting, there will probably be fewer failures from planting now than if the work were delayed until March. Where, however, the ground to be planted is of a clayey nature or in an unkind state at present, it will undoubtedly be better to defer planting until spring, meantime using every means to improve the state of the land; soils of this nature should always be dug or trenched some considerable time before planting, as neither drainage nor anything but exposure to the action of the atmosphere will bring them into a fit state for planting. While, however, I would not hesitate to plant small "stuff" generally at present, things which are at all tender had better be left until the chance of severe frost is over; and the transplanting of large evergreens which has unfortunately been delayed until now should be put off until the weather becomes mild in spring, especially things which are known not to be perfectly hardy. Choice plants in borders intended to be protected for the winter by slightly covering the roots, &c., should be seen to at once. Moss, when it can be obtained in good, thick, flakey pieces, is, perhaps, the best material that can be used for that purpose, but unless it can be procured in pieces of some thickness it is not so good as spent tan, coal ashes, or half-decayed leaves. Also see to getting *Fuchsias*, and such plants as are usually protected for the winter by covering, secured against frost before it is too late. Dry fern is an excellent material for covering the stems, &c., of plants that require a slight protection in winter, and is, doubtless, the least objectionable as regards colour of anything at command, but it is not easily procured in many neighbourhoods, and, probably, the best substitute is straw that has been exposed to the weather for some time to darken its colour. Choice sorts of *Hollyhocks*, of which there is not a sufficient stock of well-established young plants in pots, should be taken up, potted, and placed under glass for the winter, for these cannot with safety be trusted to the mercies of a severe winter, and plants taken up, potted now, and wintered in a cool house will be exceedingly useful in furnishing cuttings, and these if got in early in the spring will make splendid plants next season. Let ground intended to be planted with *Dahlias* and *Hollyhocks* next season be deeply trenched and ridged-up, so as to expose the soil as much as possible to the weather, putting in plenty of rotten manure, especially where the *Hollyhocks* are to stand, for these require a deep rich soil.

GREENHOUSE AND CONSERVATORY.

Next to *Camellias*, *Azaleas* are, perhaps, the most showy plants than can be had in bloom early in spring; and where there is a good stock to select from, some of the most forward plants should be placed in heat soon, moistening them overhead two or three times a-day. Unless, however, plants can be had which make their growth and set their buds early, they need hardly be expected to flower so finely as under more natural circumstances in spring, and unless the buds are plump there will be some danger of the plants starting into growth instead of flowering. Dutch bulbs should be largely used for forcing at this season, and where hardy shrubs are forced for the decoration of the house these should be got into flower as soon as circumstances admit. Do not forget to introduce into gentle heat by degrees a good batch of *Roses*, choosing the most promising plants of *Teas*, *Bourbons*, and *Hybrid Perpetuals*, which are the best kinds for winter forcing. A gentle bottom heat will be of service to these in order to get them into flower early, as also to most other plants, and a moist state of the atmosphere must be secured, admitting a little air freely on every favourable opportunity. In greenhouses damp or insects soon do irreparable injury to softwooded plants at this season, and these should be carefully attended to if they are to be wintered in first-rate condition. *Pelargoniums* should be kept rather cool and dry, giving whatever water may be necessary on the mornings of fine days, so that the superfluous moisture may be removed before evening, avoiding the use of fire heat except when necessary to prevent the temperature falling below 40°, or to dispel damp when this cannot be safely done by giving air. *Calceolarias*

require very similar treatment, except that they are very subject to the attacks of thrips unless afforded a moist atmosphere; they must, therefore, be narrowly watched, and smoked lightly two or three evenings successively if this pest makes its appearance, keeping the atmosphere moist on every favourable opportunity to prevent the foliage from flagging. Cinerarias for late blooming must also be kept cool and airy, and should not be allowed to suffer from want of pot room. These must not be trusted in cold pits after this season, for they cannot endure much frost. Plants intended to flower early should be encouraged with a gentle heat, keeping them near the glass, and admitting air on every favourable opportunity.

COLD PITS.

Expose the stock here freely to air on every favourable opportunity, so as to check growth and get the wood firm, in which state the plants will be less liable to suffer from the confinement which may soon be necessary, than if kept close and coddled with too much warmth and moisture now. Very little water will be required at the roots, but look over the stock every few days, withholding water until it is absolutely wanted, and then giving a moderate soaking, which is the only safe method of watering at this season. Heaths and other things subject to the attacks of mildew must be closely watched, and sulphur applied the moment that the enemy is perceived. But neither this nor green fly will be very troublesome unless the plants are kept too close and damp; therefore, be careful to keep the stock rather dry, giving plenty of air when this can be done with safety.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Broccoli this season will be all the better of being laid down, as that will to some extent arrest the too free growth, and thus enable the plants to stand frost better, if it should be severe.

Borecoles of all kinds generally need little attention. We prefer the dwarfs, as Veitch's and the Scotch Cabbaging; but an immense return can be taken from the taller kinds, more especially if the tops are taken early, so as to foster fine gatherings all along the stems. We always think that these small side shoots are the sweetest.

Brussels Sprouts.—Nipping-out the points always helps the side shoots or sprouts to come early. The top of a Brussels Sprout has always a flavour of its own, but it is as well to cut the plants over early in October or November, so that the frost shall not influence the cut stem. After cutting the tops of some rows of Brussels Sprouts we have often gone along and daubed each top with a paint of clay and lime, and a little soot. This prevented all cracking. When we neglected this, after cutting off the tops, we have had huge plants split from top to bottom by a severe frost. As hinted above, the advantages of taking off the top are twofold—first, the flavour of the top is different from the sprouts, good as they are, and then when the head is nipped out or cut for use the sprouts on the side come quicker and better. Well cooked, we scarcely know anything better than compact Brussels Sprouts.

Asparagus.—The weather being so mild we were obliged to give more air than we like, as too much cold air at this season hardens the shoots. Our first, without this precaution, would have been a week earlier than we should have cared to have it when wanted.

A great mistake is often made by ladies and gentlemen in not giving notice to their gardeners of the when, the number, and the period of staying of expected visitors. We have known scores of cases of great disappointment from this simple cause. It is well that a gardener, like every other servant, should be courteous and obliging, but men of sterling worth and honest independence of feeling will not condescend to ask as a favour for intelligence from other servants, when it ought to come directly as a mere matter of business. Some of the best gardeners to our certain knowledge have changed places from want of an understanding on this simple matter. Of course, anyone can see at a glance that there would be perfect waste if the preparations for a common general establishment were to be just the same as were wanted for some ten to thirty in addition as visitors.

Mushrooms.—In reply to some ten inquiries, we wish to state that for a short time we shall not be able to treat practically on the growth of Mushrooms in summer in open sheds, &c. The matter has been frequently alluded to, and if any reader gives a particular case and wants to make the most of it, we shall do our best to suit our reply to the circumstances.

For many years we have never tasted or hardly seen a park Mushroom. Where Mushrooms are in constant demand the gardener will soon find out in these days of game, &c., that it is better to avoid all contact with the interests supposed or real of keepers, &c. A man might go through an open space of a park and not do much harm to young birds or leverets, but, then, he may easily have the full credit of doing so; and just as a gardener does not like the idea of a keeper poking into his houses

and pits, so neither should he intrude on the keeper's domain be it never so open and wide.

Two remarks more. First, We look upon it as a perfect fallacy to talk of the superiority of a field or park Mushroom to a cultivated one. The latter are, in our estimation, as a matter of taste and safety, far superior. We have known scores of cases in which clever gentlemen, and ladies too, who if they did not actually possess, had quite enough pretensions to epicurean lore, talk learnedly and authoritatively, that such Mushrooms were never grown in July and August by Mr. F. or anybody else, but that they felt sure they must have come from such and such a rich meadow where they had gathered them themselves some ten or twenty years ago. There are cases in which it is scarcely worth the trouble to disabuse people of their learned prejudices. One thing we do know, that a really good meadow Mushroom-advocate was a long time in thoroughly forgiving us when we showed him, and what was rather unfortunate, other friends with whom he had been an authority for years on Mushrooms, that the rich meadow Mushrooms came from a little ridge slightly covered with litter under a good-sized Horse Chestnut tree. We feel sure that now the good Mushroom authority when he reads this will have a good hearty laugh over the reminiscence.

We forgot we had a remark to make—it is just this. For many years we had no trouble in getting Mushrooms from September to May. We had fair success from May to September in a sort of shed house. For many years we grew largely out of doors in summer, say from May to September, choosing shady places and open sheds, and although we were as fortunate as most people in a Mushroom house, we never obtained such fine results in a house as in sheds under the shade of trees, and even in cellars in summer. Of course, but for the labour, deep cellars in summer are first-rate. We have, however, found shady places and open sheds very good, and from May to September far preferable to a regular Mushroom house.—R. F.

TO CORRESPONDENTS.

N.B.—Many questions must remain unanswered until next week.

COCOA-NUT FIBRE DUST (R. C. P.).—You can obtain it from the manufacturers, Messrs. Barsham, Kingston-on-Thames.

APPLES FOR SOUTH WALES (F. P.).—The sorts that will suit you at Hay for dessert and culinary use combined are Cellini, Cox's Pomona, Blenheim Pippin, Beauty of Kent, Reinette du Canada, and Wormsley Pippin.

IVY ON FRUIT TREES (W. C.).—Whether in small or large quantities, Ivy twining round the trunk of a fruit tree lessens that tree's vigour.

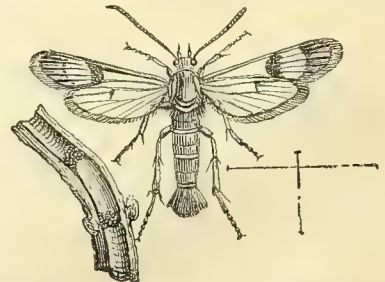
ADDRESS.—"H. J. T.'s" direction is 17, Alpha Road, Regent's Park.

WINDOW BOX (F. Wright).—For ten postage stamps you can have by post "Window Gardening for the Many." It will give you more information than we can afford space for. The box is best made with drainage holes.

VEITCH'S AUTUMN GIANT CAULIFLOWER.—"I sowed this about the second week in April, and in the first week in July I picked out the strongest plants on ground that had already produced an excellent crop of Shallots, and by the third week in September I cut as good Cauliflower as might be desired. On Saturday last from the same bed my man brought home three more heads, which surpassed any I ever grew before, and I exhibited them in my shop the whole of the evening, when many passed an opinion that they had not seen the like. I might add that a bed of Walcheren growing by the side of the above bears no comparison to it.—W. HORLEY, Luton."

CURRENT-BUSH SHOOT'S PITHELESS (H. Wille).—The shoots of your Red and White Currants being pitheless and the place brown, is caused by the larva of the Currant Sphinx, *Trochilus tipuliformis*, Sphinx tipuliformis, Sesia, or Egeria, or *Bombecia tipuliformis*, or *Bembecia tipuliformis* of others. The caterpillar is fleshy, whitish, with four yellowish brown spots near its head. The parent moth is beautiful, and may be seen at the end of May and early in June during hot sunshine, either settled on the leaves of the Currant, or flying around the flowers of the Syringa and Lilac. It is about three-quarters of an inch across the wings when these are quite opened; the prevailing colour is bluish black, with various parts yellow; the antennae black; the breast with a yellow line on each side; the abdomen, or lower part of the body, has three yellow rings round it in the females, and four in the males; the fore wings are barred and veined with black; it has a brush of fine scales at the end of its abdomen, which fan it can expand as it pleases. The Red, White, and Black Currant, and, we think, the Gooseberry, are all liable to its attacks. It lays its eggs at this time in openings of the bark of a young shoot; and the caterpillar, immediately it is hatched, penetrates to its pith, and eats its way down this until it reaches the pith of the main branch. The only securative measures are to kill the moth whenever seen, and to split open the withered branches and serve the caterpillars similarly.

MICE DESTROYING CROCUSES, &c. (A Young Reader).—The only thing likely



Currant Sphinx.

to keep off the mice is coating the bulbs with red lead. Wet the bulbs, and then roll them in the red lead, so as to coat them all over. Could you not thin the ranks of the mice by trapping?

RANUNCULUS CULTURE (Idem).—Ranunculuses grow from 9 inches to a foot high. The bed should be well and deeply dug, working in plenty of decomposed manure; turn over the ground in dry and frosty weather, and plant for an early bloom now, for a late bloom in February. The soil should be well pulverised. Draw drills 5 inches apart and 2 inches deep, sprinkle some silver sand at the bottom of the drills, and plant the tubers 4 inches apart, pressing the "claws" gently down in the said to about half their length. Cover the roots just over the crown with fine sand, and then with soil from the drills make the surface quite even. Cover with from one-half to three-quarters of an inch of three parts decayed leaves. Watering with weak liquid manure may be practised after they begin to button. Take up when the leaves turn yellow.

LATEST DISH OF PEAS THIS YEAR (E. Ennis).—Our last dish of Peas was sent in on November 7th. Owing to the frosts and wet, Peas in some places cannot be had out-doors after September. Ours is a good Pea soil. We have gathered Peas on the 17th of December in Yorkshire.—G. A.

CUTTING DOWN PURZE (A. E. F. C.).—It is best done at the end of March, and the plants may be cut down to within a few inches of the root. If they are very old some of them may not again grow. There is a limit to the life of even these plants.

CUCUMBER AND PROPAGATING-PIT CONSTRUCTION (A Subscriber).—We advise you to have front as well as top ventilation. We would have four small shutter ventilators in the front wall. The two 3-inch pipes will not be sufficient for top heat. You should have four—two in front of the house over the bed, and two in the pathway, as shown in your sketch; and instead of two we should have had three under the bed, or, if they are returns, four 3-inch pipes. We would further suggest that you have the pipes in a chamber under the bed, leaving a foot to 15-inch space over it for drainage, soil, or plunging material. Let there be small shutters in the side wall of the chamber next the path to allow of the escape of any excess of heat, or to regulate the heat to the required degree.

GUANO WATER FOR ADIANTUMS (Longlands).—We should not advise guano water for Adiantums and other Ferns. The only beneficial liquid manure we have known given to these plants was cow dung and soot in equal proportions, adding thirty gallons of water to one peck, and stirring well up before each application.

LAYING DOWN A FOWL-RUN WITH GRASS (Sergeant).—If you can procure turf, dig the ground, level the surface, and lay it with turf cut about 1½ inch thick. Do this any time in mild weather by April. If you cannot obtain the turf, dig and level the ground, let it so remain till April, then rake fine, make firm, and sow in calm weather when there is a prospect of rain. 1 lb. *Poa nemoralis*, 2 lbs. *Poa trivialis*, 3 lbs. *Poa pratensis*, 12 lbs. *Lolium perenne*, 6 lbs. *Festuca drincoula*, 2 lbs. *Festuca rubra*, 8 lbs. *Cynosurus cristatus*, 1 lb. *Avena flavescens*, 1 lb. *Anthoxanthum odoratum*, 6 lbs. *Lolium perenne*, *Poaeyanum*, 8 lbs. *Trifolium repens*, and 4 lbs. *Trifolium minus*. The above quantity for one acre. Roll well after sowing, and keep the fowls from it for six weeks.

FORMING STANDARD GERANIUMS (Idem).—Train them up with a single stem to the height required, cutting off all side shoots. Put in a stake to keep the stem erect. When the shoot is as high as you require, take out its point and stop the side shoots when they have grown 3 inches, and those resulting from the stopping at the third or fourth leaf. Continue stopping until you have a compact symmetrical head.

PRUNING GOOSEBERRY AND CURRANT BUSHES (J. C. B. K.).—The knife is preferable to the shears; it makes a clean cut, whilst shears make a bruising cut. Besides, with the knife only the part desired need be cut off, whilst with the shears many parts which it is not desirable to remove are cut off.

CUCUMBERS FAILING (Hook).—We cannot account for the failing of your plants, but from the description you give, we should say they are suffering from the Cucumber disease, for which we know no cure. The best plan for you under the circumstances is to renew the soil and plants.

HARDINESS OF DESFONTAINIA SPINOSA (J. S., York).—We have not seen this thriving out of doors as far north as York, but in the western counties we have seen it do well in a well-drained soil of light loam with one-third peat added. We are inclined to think it would prove hardy with you. Why not try it?

SPARROWS DESTROYING GOOSEBERRY BUDS (E. B.).—We have found a mixture of lime and soot made into a thin paste obnoxious to the birds if applied to the shoots with a brush. We have advantageously used soft soap at the rate of 4 ozs. to the gallon. The best remedy, however, is to cover the trees with nets. Black worsted strung from branch to branch so as to form 2-inch meshes scares them, and so do pieces of glass suspended so that they may strike together.

JERUSALEM ARTICHOKE FLOWER (A. B.).—The flowering of this species of the Sunflower genus is not uncommon. A plant of it may be made to flower by removing its tubers without disturbing the fibrous roots.

YARD OF GRAVEL (T. Cramp).—A cubic yard of gravel is 3 feet high, broad, and long—27 cubic feet, and weighs about one and a half ton.

REMOVING AN OLD VINE AND PLUM TREE (Herbert).—We do not advise you to save the old Vine; a young one would succeed much better and would soon cover its allotted space. You may save the Plum tree. The way to lift it is this—Dig a trench 2 feet deep at the distance of 5 feet from the bole of the tree, then with a digging-fork work under the roots and clear away a large proportion of the mould, saving all the small roots, lift the tree out, and plant it somewhere until the site is ready for it.

EARLY PEACHES AND NECTARINES (T. A. C.).—The best early *Nectarines* named in the order of ripening are—Hunt's Tawny, Lord Napier, Murrey, Balgown, and Rivers's Orange. *Peaches*.—Early Beatrice, Early York, Early Grosse Mignonne, Noblesse, Royal George, and Grosse Mignonne. The trees should not—indeed will not—bear much fruit next year. Turfy loam which contains a good proportion of clay is the best material for a Peach border. The border ought to be 20 inches deep, and if the subsoil is not naturally dry it should be drained. The Vines planted at 4 feet will shade the trees underneath to an injurious extent. From twelve to eighteen heads of Sea-kale go to a bundle in Covent Garden.

PRUNING PYRUS JAPONICA (W. G. D.).—The best time to prune it is now, or as soon as the leaves have fallen. In pruning, it will be necessary to train in shoots about 6 inches apart, so as to cover the wall, and then cut all other

shoots to within an inch of their base, leaving, however, any shoots that may be close to the wall, and which do not give an untidy appearance. The flowers are produced on the wood of this year, or the growths this year are those which flower next, therefore train-in a sufficient number of shoots for flowering.

HOLLY (R. S. S.).—The leaf sent is larger than usual, but seedlings sometimes vary both in the size and the formation of the leaf. Yours is not a new variety; it can best be described as a robust form of the common Holly (*Ilex Aquifolium*).

TRENCHING AND DOUBLE-DIGGING (H. C.).—Trenching is digging two spades deep, and shovelling out the crumbs at the bottom of the second spit. Double-digging is digging two spades deep and not removing the crumbs.

PALMS FOR GREENHOUSE (A Subscriber).—Palms do not require strong light and sunshine, but they need more light and air than most Ferns. The Palms will, however, succeed. A dozen suitable for a greenhouse are *Chamaerops excelsa*, *Chamaedorea glauca*, *Livistonia australis*, *Cocos coronata*, *Phoenix reclinata*, *P. dactylifera*, *Seafaritia elegans*, *Thrinax parviflora*, *Chamaerops Palmetto*, *Jubaea spectabilis*, *Latania borbonica*, and *Chamaerops Fortunei*.

CHARCOAL FOR FERNS (Idem).—Charcoal is as good as any ingredient in the compost for Ferns, but should be used to a greater extent than one-fourth. It should be broken-up for small plants, and used from about the size of a pea to that of a hazel or walnut, increasing the size of the pieces in proportion to the size of the plants.

DIPLOPAPPUS CHRYSOPHYLLA.—Several correspondents are anxious to know where this plant can be procured.

TEMPERATURE OF GREENHOUSE (A Constant Reader).—As you have a mixed collection, place the hardiest and those that need most air in front of the house, and the most tender subjects in the warmest part, where less air is admitted. The temperature may be 40° at night, and 45° to 50° by day from fire heat up to April. Take advantage of mild weather to admit air freely. On rainy days it is well, if mild, to admit a little air if it can be done without letting wet into the house. In foggy weather it is best to admit very little air, or, if the fog be dense, none.

PRUNING PEACH TREES (A Constant Reader).—In pruning Peach trees it is well to cut out as many as you can of the old, long, bare shoots, leaving young shoots to take their place, and then to go over these and cut out the weakest, leaving, however, enough of young shoots for making-in. They should be about 1 foot apart along the main branches, which should be 12 to 15 inches apart. As the young shoots will be left on both sides, they will be about 6 inches apart. The young shoots, or the bearing wood of next year, should be cut back to a wood bud or a triple bud—that is, to two flower-buds with a wood bud between them, and be left about 10 inches long. If the shoots are weak, and have no wood buds except at the base and point, then they must be trained-in their full length. The time for pruning Peach trees is early in spring, about February or when the buds have begun to swell, so as to distinguish the bloom from the wood buds.

HYDRANGEA IN OPEN GROUND (Amateur).—As the plants have not flowered, we conclude they were not in a flowering state when planted out; and as *Hydrangeas* are liable to be cut off to the ground in severe weather, and especially after such a season as the present, when the wood must be very unripe, we advise you to take them up carefully and place them in pots not very large. Winter them in a cold pit, with the pots plunged to the rim in ashes, or keep them in a cool house safe from frost, giving no more water than sufficient to keep the wood plump. Good rich loam, with a little leaf soil and sand, will make a suitable compost.

CAMELLIA WITH TOO MANY BUDS—LIQUID MANURE (Idem).—We should thin-out the buds on the plant not more than 12 inches high to one on each shoot. Too many flowers on so young a plant would weaken it. We should prefer a temperature of 35° to 40° to one of from 50° to 55°. For flowering, *Camellias* require a temperature of 45°. The best liquid manure for *Camellias* is probably one peck of sheep's droppings to thirty gallons of water, adding half a peck of soot. Stir well up, let the whole stand a day or two, and stir up at each application, which may be once a week. Let the liquid manure be heated to the temperature of the house in which the plants are growing.

NAMES OF PLANTS (J. G.).—*Adiantum cuneatum*, Wedge-pinnate Maiden-hair Fern. (*Spero*).—The leaves are those of the Silver Tree, *Leucadendron argenteum*. (*J. S. S.*)—It is *Enonymus europaeus*, or Spindle Tree. (*S.*)—The plant from Italy is a variety of *Zinnia elegans*. (*Arthur*)—1, *Tradescantia virginica*; 2, Leaves only. (*W. C.*)—1, Apparently a *Clethra*, but the specimen is too immature; 2, *A. torenia*, probably *T. asiatica*. (*J. G.*)—1, *Blechnum occidentale*; 2, *Cystopteris fragilis*; 3, *Doodia caudata*; 4, *Asplenium viviparum*; 5, *A. fontanum*; 6, *Pteris serrulata*. (*Mac*)—1, *Atrichum undulatum*; 2, *Bryum* (?) sp.; 3, *Hypnum rutabulum*; 4, *Dicranum majus*; 5, *D. scoparium*; 6, *Pogonatum aloides*. (*J. Wade*)—3, *Cystopteris fragilis*; 4, *Polystichum angulare*; also two unnumbered Ferns, one of which is *Polypodium vulgare*. (*H. G., Oldham*)—It is *Hedera Regneriana*, *Regner's Ivy*, one of the best for covering a surface with green leaves. (*Upfield Green*)—The time needed for naming plants is as much as can be spared, even with the best aid that inquirers can give us. Numbering the specimens saves much writing. We are always glad to give the information asked for; it is part of our duty.

POULTRY, BEE, AND PIGEON CHRONICLE.

CRYSTAL PALACE POULTRY SHOW ARRANGEMENTS.

I EXHIBITED some valuable Pigeons at the late Great London Poultry Show, and being very anxious to remove my birds from there as early as possible after the Show, I sent my man and trap many miles from my residence for them. He waited at the building from 7 p.m. until 8, and returned home with the pleasing intelligence that the Committee had decided at the eleventh hour that they would not deliver a bird until Friday morning, although I was told by the Secretary I could have my birds after seven o'clock. Now, I find upon making inquiry that the whole task of delivery in the Pigeon department of this immense Show devolved upon one committeeman, and that

four of those gentlemen who were supposed to be still representing the interests of exhibitors had resigned. May I ask why this was suppressed from the knowledge of fanciers generally? as it may possibly account for the great disappointment those persons experienced who were, like myself, put to unnecessary trouble and expense.—AN OLD SUB.

THE CRYSTAL PALACE POULTRY AND PIGEON SHOW.—No. 2.

IN my hurried sketch of last week I promised to write again more fully, and now I sit down to redeem my promise. I cannot but think that this, the greatest of all shows, held in the grandest of all show-rooms, will form an era in poultry matters. The *Times* has inserted a long notice—long for so important and imperial a newspaper; and the whole of the nave of the Palace and transept being occupied, the Show being no longer held in a corner, the eye of every visitor was taken up by it. The poultry and Pigeons took marked possession of the Palace, their presence was everywhere.

One result I should hail with satisfaction—that is, an improvement in the railway companies, who as yet are exhibitors' worst enemies. Surely at length they must see that due care and courtesy, also moderation in charges, become those who so largely benefit by the poultry taste. The worst is that care of valuable birds is entrusted to a series of station-masters, who may be fond of dogs or white mice, and would bestow much attention on them, but who sometimes allow fowls to be shoved about anyhow and anywhere, or to be left on draughty platforms, and, worst of all, not forwarded promptly.

But let me turn and give a word of praise to those to whom praise is most justly due. I could not but be struck at the admirable arrangement of this vast Show. It was a great thing that any one could be found able to provide good and suitable pens for upwards of three thousand birds. This, fortunately, Mr. Billett could do, and did well. It was a great affair to undertake, and if not properly done the whole would have been spoiled. All—committee, exhibitors, and visitors, yes, and the birds, too—owe much to Mr. Billett. Then the way in which the pens were placed, as well as where they were placed, ought to have a notice. The Crystal Palace authorities gave up the whole Palace, not forcing the Show to be held in various corners—they therefore deserve the thanks of the poultry world. The work of arrangement must have been a laborious and tedious one. The sight of the unpacking ought to have been sketched. The hampers and baskets as arranged and piled-up in the great south dining-room was a sight not to be forgotten, and I saw only part; much more must have been the busy scene worthy of eye and pencil; and bear in mind the labour! I wish also to say a word about the floral decorations. The Chrysanthemums were just in bloom, and Mr. T. Williams naturally wanted them to be seen and admired, but those fowls were coming, and flowers will not put off their blooming! What was to be done? Why an alliance formed between the poultry and the flowers, and a sort of J. or H. in fact carried out, and nobly the banks of flowers looked, and much they added to the Show, and the taste was great that formed the alliance. Non-poultry-loving visitors always make a complaint about the crowing. Now I for one like nature much better than art. I can bear the crowing of cocks, but not the noise of a threshing machine. Now, crowing at a show is unpleasant in proportion to the smallness of the place of exhibition. I observed that in the high-roofed spacious Palace the crowing was very little to be noticed, the sound melted away in the space. The sense of smell, too, was gratified, not annoyed—no smell of pigs or odour of stables, just as there was also no poking into dark corners or looking down to see if any bird was below.

Then the Judges were the right men—Mr. Hewitt, whom one cannot think of unconnected with poultry, the *facile princeps* of Judges, whose keen eyes are sure to detect the stained leg, or the tail or comb tricks. Then the courteous and clever Capt. Heaton; that shrewd Lancashire lad, Mr. Teebay; and up-to-the-mark John Martin; Mr. J. H. Smith I have not the pleasure of knowing. Then as to the Judges of my own special favourites, the Pigeons. There was that veteran fancier, the Hewitt of Pigeon Judges, Mr. Esquilant; the very competent Mr. Corker; Mr. J. Percival, whose pleasant countenance has nothing of the Dragon about it, although he is the best Judge of Dragons; and lastly, Mr. Harrison Weir, whom I have wanted to shake hands with for the last dozen years, and thank him for the pleasure his pencil has given me many and many a time, but I failed to identify him or find him on inquiry.

While looking at this vast Show I could not but remember that for many years there was no show held at the Crystal Palace. There had been, and then came a long pause; why, I do not accurately know, but I have heard that it was supposed the poultry would not pay, or a show succeed—but has not indeed succeeded?

Another thing I must notice before going to details—that is, I never saw, on the Tuesday especially (doubtless owing to the

favourable notice in the *Times* and other daily papers), such a throng of visitors at any show where only poultry and Pigeons were exhibited. At the Bath and West of England and kindred shows there are, of course, other attractions—horses, flowers, machinery, &c., and those who come to see them naturally stroll through the poultry tents; but here were only birds, and yet a crowd, for everybody has seen the Palace itself many times.

Now for the Pigeons.

Pouters.—Blue-pied cocks—First prize won by a bird of Mr. Volckman's, which, however, somewhat drops his shoulders; still it and the second prize, won by the same exhibitor, are grand birds. The third-prize bird a little too short behind, and cocked his tail somewhat. Black-pied cocks—The first and cup a fine-limbed bird, but deficient in crop; the second, inferior tail; the third, very inferior. Red or Yellow-pied cocks—The first prize not clear red, but went off in colour in the feathers nearing the flight; the second, Mr. Ewbank's, a good bird, but the yellow not a good colour; the third, Mr. Fulton's, much better in colour, being a first-rate red. White cocks—First, second, and third, Mr. Rose's, Mr. Hawley's, and Mrs. Ladd's, were good birds all over.

Any colour or marking, cocks—An eccentric-coloured class, yet exhibiting marks of strong-constitutioned birds. First prize, a Mealy, Mr. Fulton's, a very large bird; second, a Chequer, Mr. Ewbank's, rather flagged; third, Mr. A. Heath's, a grizzly-tailed White, and a very fine bird. There was a bird of Mr. Volckman's, No. 2212, unnoticed, but which pleased me much.

Any colour and markings, bred in 1872—First and cup, Mr. Fulton's, a Blue, a very promising and well-marked bird; second, a White, belonging to Mr. Rose, a very good Pigeon; third, a Blue, belonging to the same fancier, too short in flight and tail.

Next the hens.—Blue-pied—First, a fine Blue hen; second, good; third, also Mr. Ewbank's, had a tight crop. Black-pied hens—A poor class. Red or Yellow-pied hens—First, a Yellow, like a cock in size and crop, and a good cock he would be too, it is the property of Mr. Fulton; second, Mr. Hill's, a pale yellow; third, not remarkable, owfier Mr. Fulton. White hens, as a class too low on the leg—First, a lovely bird; second and third, both good. Hens, Any colour and markings—First and second, Mr. Volckman's, the one a Mealy, the other a White with blue tail; third, Mr. Fulton's. Hens, any colour, bred in 1872—First, Mr. Stiles's bird, a White, and a very graceful Pigeon; second, Mrs. Ladd's, white and good; third, Mr. Ewbank's, Blue, and nice.

Best pair (any age or colour)—First, Mr. Jones; second, Mr. Rose's, a White; third, Mr. Pratt.

Pigmy Pouters, best pair—First and cup, Mr. Tegetmeier's. I admired the cock bird especially; second, also Mr. Tegetmeier's; third, Mr. Beldon's, Cream Isabels with white bars, an extremely well-matched and pretty pair. I could not leave the pen for a long time from admiration of the pretty little pets.

Carriers.—Black cocks—This class, a baker's dozen in number, was so good that more than half—viz., seven, were either prize birds or v.h.c., and well they deserved the distinctions. Prizewinners Messrs. Fulton and Heritage. Black hens were also very good; Mr. Wiltshire's second-prize was my favourite.

Dun cocks—A dozen and seven were noticed, which speaks worlds for their goodness. Dun hens—Capt. Heaton's first an excellent bird. Sixteen entries, and actually ten noticed! but then look at the names of the exhibitors—Heaton, Ord, Massey, Wiltshire!

Carrier cocks, any other colour—First, Mr. Duckworth's Blue, an admirable bird. Hens, any other colour—Mr. Duckworth's first and best.

Carriers, Black, single bird bred in 1872—A very large class, thirty-five birds in all; four prizes awarded, and five other birds noticed. Many excellent birds in this class.

Dun, single birds bred in 1872—Mr. Wiltshire a long way first. Any other colour, single bird bred in 1872—Nothing very remarkable. Lastly, Best pair, any age or colour—Ten out of sixteen noticed.

Dragoons.—Blue, single bird—First and cup, Mr. South's, surely too light in colour; the next prize birds, Mr. Graham's and Mr. Tegetmeier's, better in this respect.

Silver Dragoons—Some had blackish but not actual black bars, and which were apt to be ragged. But this colour does not match the tail, and I own I do not approve of it; still, of course, in fancy matters especially, there is abundant room for difference of opinion. The colour of Mr. Bishop's bird, No. 2481, is what I prefer.

Red or Yellows brought out Mr. Betty's charming Yellows, ten of them, and his cup bird was excellent, the colour sound throughout; second prize, Mr. Graham's, very good. All the prizes went to Yellows.

Dragoons, any other colour, brought out a great number of clean-looking Whites. Mr. Bishop had first and second, both White; while an old-fashioned Grizzle, and a good bird, too, took third, his owner Mr. Dwelly.

Tumblers.—Almond cocks—First, Mr. Fulton's, a feather bird; second prize, Mr. Ford's, lovely head and beak; there was also a splendid bird unnoticed, No. 2550, Mr. Heritage's. Almond

hens—First, Mr. Ford's, a good ground colour, but not head and beak; second, Mr. Ford; third, Mr. Blenkinsop.

Tumblers, Any other variety cocks—First, Yellow Agate Mottle, a head-and-beak bird, Mr. Heritage's; second, a very good Kite, Mr. Blenkinsop's; third, a good Red of Mr. Adams's. But I look in vain for Short-faced Balds, and I see only one Beard, and the lovely Black Mottles are far from numerous. Surely this class ought to have been stronger.

As to the hens, they were equally few, only twelve in number. Second and third prizes, good head-and-beak birds.

Barbs.—These were not over-numerous, but were of undoubted goodness. Mr. H. Maynard's first-prize was a healthy, handsome, well-built bird.

Jacobins, Red or Yellow, were a very good class, but I could not understand why the cup went as it did. It was won by a Red bird with hood strangely ragged, and certainly not lying flat to the head. All the prize and noticed birds in this class were good; the second-prize bird, Mr. Vander Meersch's, a Yellow, may be pronounced very good indeed.

Jacobins, any other colour, brought Mr. Fulton's raven Black to the front; the second, also Black, Mr. J. Thompson's; and the same gentleman's little Blue bird, an uncommon colour, and not wholly in this case free from little ticks of black, won third. This was a very interesting class.

Fantails.—White—Good, very good, but I preferred the second-prize bird to the first; Mr. Liversidge's two h.c. birds were also very good.

Fantails, any other colour, only six in number, but Mr. Yardley's second a good, clean, sound Blue. He took all three prizes.

Nuns.—A good many high-class birds in this lot.

Trumpeters.—Black, single bird—First, Mr. Gamble's, a splendid Black; second, Mr. Jones.

Any other colour—The first and second, wonderful Mottles; third, a White, and worthy.

The Owls.—Many of the English too foreign-looking, and some of the foreign too English-looking.

Turbits were undoubtedly an extra good class in the Blue and Silver. A Silver first, a Blue second, and a Blue third, Mr. Jones's, and a good one. The Any other colour brought a black-shouldered one first; second, Mr. Vander Meersch's; and Mr. Croft's third. The same gentleman had a charming one, No. 2928, shell-crowned, but a very pretty bird; and No. 2832, Mr. Nalder's, was an excellent Pigeon.

Maggies.—First, Mr. Jones's, Yellow, and lovely; second, Mr. Fulton; third, Mr. Yardley.

Runts.—As usual, mostly Silver and Blue, but one an excellent Yellow. A lady first, Miss Davies; second Mr. Green, and the Yellow belonging to Mr. Richards only h.c.

Cumulets.—A pearl-eyed, common-looking, Tumbler-like sort of Pigeons, had actually a class to themselves. They are said to be wonderful on the wing, but no eye-witness has told me of their performances.

Antwerps, Short-faced and Homing, very numerous; the former pretty; the latter look ready for their very useful work. The first-prize Homing, Mr. H. Jennings, mealy and clever-looking. These birds are of national importance, and ought to be kept extensively in case of a time of need.

Last came *Any other Variety*. First Mr. J. Bowes, an excellent pair of Archangels; second Mr. Beldon; third Mr. Thompson with a very good pair of Terns or Sea Swallows. There were also Ice Pigeons, Starlings, &c., making up a very interesting but too small class. As to the Selling class it was large, and good, bad, and indifferent. Then, apart from others, under the organ gallery, were the best collection of four pairs of Pigeons exclusive of Carriers, Pouters, and Tumblers. First and cup, Mr. Sergeantson's, all Fantails; second Mr. Baker's Fans, Jacks, Turbits, and Barbs; third, Mr. G. South's Dragons. The birds were excellent, but I prefer four different varieties in a pen, and I should for that reason have placed Mr. Baker's first, but most of the pens had worthy occupants.

Such a Pigeon Show is a credit to English fanciers, and must cause a strong body of recruits to be enlisted, so admirably were the birds shown and seen.—WILTSHIRE RECTOR.

FALKIRK POULTRY SHOW.

THE fourth annual Exhibition was held in the Corn Exchange on the 19th and 20th inst. The whole affair was in the hands of that indefatigable gentleman, Mr. Roberts, who, with no Committee, applied an amount of skill and effort such as can never be surpassed. The pens from the Royal Gymnasium at Edinburgh were well suited for the purpose, were well arranged, and the effect good.

Adult *Spanish* were very good, and in fair feather; but the young birds of this year proved by far the best, the quality of face and drop being most striking. They numbered twenty-four pens. Of adult *Dorkings*, the first-prize also won the extra prize; they were Dark Greys, the second being Silvers. The young Dark Greys were a fair lot of birds, and the Silvers ex-

cellent. There was a class for *Scotch Greys*, a breed not known here in proportion to their merit, and these were the best we have seen. *Cochins*, with the exception of a few birds, were not of great merit, but the first-prize cock and second-prize pullet were birds to be coveted. *Brahmas* mustered well, but many of the adult birds were scarcely clear of the moult. *Hamburghs* were of moderate quality, though those shown by the Countess of Tankerville were well worthy of the special prize; and the Silver-spangled were also of high merit, but unfortunately several pens of Mr. Walker's were too late for competition. There was no class for Silver-pencilled, and we consider this a mistake. *Polands* were a nice lot, the special prize being carried off by Golden; the second being Blacks, and the third Silvers. In *Red Game* fowls the special prize went to a substantial-looking pair of Brown Reds, and the second to a handsome pair of Black Red chickens; but in the Other variety class there was nothing noteworthy except the first-prize chickens. A grand pen of Black *Hamburghs* won in the "Variety," the second being Sultans, the third Silver-pencilled *Hamburghs*, and the fourth a pair of Pile Malays, which were nice but rather small.

Aylesbury Ducks were not of special merit, but the Rouens were very fine, also the single pair of Mandarins. The *Turkeys* were of fair quality and mostly of the Norfolk variety.

Game Bantams were a very large class, but some of the best specimens were sadly out of condition, although the winners, which were all Black-breasted Reds, left nothing to be desired. In Black Bantams the first-prize pair eclipsed all others, although the class was a very good one. In the Other variety class, first came Golden Sebrights, the hen in this pen being very small and capably matched with the cock. Silver Sebrights of rare quality were second.

There were some good birds in the Selling classes, and many found ready purchasers.

There were but eight classes for *Pigeons*, but these were well filled. The Pouters were very good, all measuring well in both feather and thigh, although the prizes were not awarded to these points alone. The first, third, and fourth were Whites, and the second Blues. Fantails were a large class, and the quality such as is rarely brought together. Jacobins were also good, a neat small pair of Reds taking first position, Yellows second, and Reds third. It is seldom so good a class is seen in Scotland. Tumblers were very good, the first being Almonds, the second Black Mottles, and the third also Almonds. Carriers were good but not numerous. The "Variety" class was very large, and the specimens good throughout, many of the standard varieties being represented. German Letz were first, Black Trumpeters second, Black Barbs third (for which variety we recommend a class to be made at future shows), and Dragons fourth.

Of *Rabbits* there was a capital entry, and the specimens in all the classes mostly of the highest merit. The first-prize Lop-eared buck was a Sooty Fawn, ears 22½ inches in length by 4½ inches in width, and shown in the highest condition; the second a Black-and-white, 21 inches by 4½ inches; and the third, 21½ inches by 4½ inches, was a capital Fawn; those highly commended being—one 21½ inches by 4½, and one 21 inches by 4½. The does measured better than the bucks. The first-prize doe, winning the cup, was a Fawn, ears 23 inches by 4½; the second Black-and-white, 21½ inches by 4½; the third, Fawn, 22½ inches, by 4½, but not in good condition. The weights of the three Rabbits in the class for weight were 14 lbs. 5 ozs., 12 lbs. 4 ozs., and 11 lbs. 10 ozs. Of the Fancy classes the Himalayan figured best in both numbers and quality, the first-prize buck, a Rabbit of great size and extraordinary points, winning the cup for the best of four classes; the second and third-prize Rabbits pressing closely in merit. The Silver-Greys were of great beauty, most of the specimens being in grand condition and fur, and well and uniformly silvered; the first and second being does, and the third a buck. Angoras were also a good lot, the fleeces of most of those that were noticed being very fine and well dressed, although, as compared with the first-prize buck, the rest were not large. In the Other variety class, a pretty Grey-and-white Dutch was first, a Blue-and-white second, a Black-and-white third, and a Fawn-and-white very highly commended.

SPANISH.—1, D. McBeath, Bridge of Allan. 2 and 3, W. C. Hardie, Carron. 4, R. Somerville, Edinburgh. *Chickens*.—Plate, 2, 3, and 4, W. C. Hardie. *h.c.*, D. McBeath; R. Somerville (2); J. Bowness. *c.*, D. McBeath; A. Robertson; R. Dickie, Alva (2).

RAINES.—1 and Special, J. White. 2, W. Weir, Inches, Falkirk. 3, T. Raines. 4, R. Kerr, Bellshill.

DORKINGS.—Coloured.—*Chickens*.—1 and *h.c.*, J. Turnbull, Falkirk. 2, D. Draper, jun., Falkirk. 3, C. Widdas, North Bitchburn, Darlington. 4, Countess of Tankerville, Chillingham.

DORKINGS.—Silver.—*Chickens*.—1, D. Annan, Monzie, Cupar Fife. 2, S. Bell. 3, J. Weir. 4, J. Malcolm *h.c.*, J. Fotheringham, Stirling (2); J. Malcolm; R. Murdoch, Kilsyth; J. Turnbull.

SCOTCH GREYS.—Medal and *h.c.*, A. Binnie, Grahamstown. 2, J. Meikle, Hamilton. 3, W. L. Callender.

COCHIN-CHINA.—1, T. Bruce, Busby. 2, A. Burnett, Montrose. 3 and 4, H. Wyse, Bishopbriggs. *h.c.*, Rev. R. Storey, Wensley, Bedale; D. & J. Ibeston; J. W. Taylor.

BRAMA FOOTRA.—1 and 2, H. Wyse. 3, D. Annan. 4, T. Raines, Bridge-hugh. *h.c.*, W. Hughes, Springburn; J. B. Cochrane, Stenhousemuir. *h.c.*, A. Burnett; J. B. Cochrane.

HAMBURGHES.—Golden-spangled.—Special, Countess of Tankerville. 2, N.

Marlor, Denton. 3, J. Newton. 4, R. H. Ashton, Mottram. c, J. Bowness, Newchurch, Manchester.

HAMBURGERS.—*Golden-pencilled.*—1, J. Bowness. 2, D. Draper, jun. 3, R. Macnab. 4, J. Ness, Pathhead.

HAMBURGERS.—*Silver-spangled.*—1, J. Bowness. 2, G. & J. Duckworth. 3, Countess of Tankerville. 4, Ashton & Booth.

POLANDS.—*Topped.*—Special and 3, J. T. Froud, Binchester. 2, A. Wylie. 4, J. Laird, Johnstone.

GAME.—*Black-breasted and other Reds.*—1, E. Aykroyd. 2, J. B. Cochrane. 3, S. M'Coll. 4, G. Williamson. *hc.* P. Burt; S. M'Coll. c, J. Bowness. *Any other Colour.*—1, Miss S. Casson. 2, E. Aykroyd, Eccleshill. 3, J. Fisher. 4, G. Briggs.

BANTAMS.—*Game.*—Special, A. Hutchison, Grahamstown. 2, S. Rigg. 3, W. Waddell. 4, Furness & Sudall, Rawtenstall. *vhc.* W. M'Gregor, Stenhousemuir. *hc.* Bellingham & Gill, Burnley (2).

BANTAMS.—*Black.*—Special, W. H. Tomlinson, Newark. 2 and 4, R. H. Ashton. 3, R. Henderson. *hc.* D. Cheyne, Morpeth.

BANTAMS.—*Any other variety.*—Special and 3, E. Walton, Horncliffe. 2, A. Johnston, Batigate. 4, R. H. Ashton. *hc.* J. Archibald; A. Robertson (Sebright).

SELLING CLASS.—*Cock.*—1, J. Fotheringham (Dorking). 2, A. Robertson, Kilmarnock (Spanish). 3, J. Wyse (Cochin). 4, D. & J. Ibeston, Whitby (Cochin). *hc.* S. Rigg, Kendal (Game Bantam); S. Bell, Castleton, Pleau (Game Bantam); W. Hughes (Brahma); J. Malcolm, Langton, Falkirk (Dorking); R. Murdoch (Dorking); J. B. Cochrane (Brahma); W. Weir (Brahma); Miss S. Casson, Ulverston (Game).

SELLING CLASS.—*Hens.*—1 and 2, D. Draper, jun. (Dorkings and Golden-pencilled Hamburgers). 3, J. Walker (Hamburg). 4, J. Fotheringham (Dorking). 5, J. B. Cochrane (Brahmas). *hc.* J. Walker (Hamburg); S. Bell (Dorking); J. Fotheringham (Dorking); J. Malcolm (Dorking); T. Laurie, Lillithgow (Scotch-Greys); D. Draper, jun. (Dorkings).

ANY OTHER VARIETY.—1, N. Marlor (Black Hamburg). 2, G. Anderton (White Sultan). 3, J. Bowness (Silver-pencilled). 4, Furness & Sudall (Malays).

DUCKS.—*Aylesbury.*—1 and 2, A. Robertson, Kilmarnock. 3, J. Meiklem. 4, W. Stark, Middlefield, Falkirk. *hc.* R. Dickie.

DUCKS.—*Rouen, or any other variety.*—Special, J. Meiklem. 2, A. Robertson. 3 and 4, W. Burns (Mandarin). *hc.* W. Swann; A. Robertson; R. Dickie.

TURKEYS.—1 and 4, W. Weir. 2, J. Webster, Carronside. 3, W. Stark.

PIGEONS.

PUTTERS.—Medal, T. Hawley, Gillington. 2, T. Rule, Durham. 3 and 4, J. M'Gill. 4, H. Yardley. *hc.* J. M. D. Brown.

FANTAILS.—Medal, J. Laird, Johnstone. 2, J. F. Loversidge. 3, W. H. Tomlinson. 4, J. Baillie. *vhc.* A. Crosbie. *hc.* A. Johnston; W. Brydone; T. Rule; J. F. Loversidge; J. E. Spence.

JACOBINS.—Medal, Furness & Sudall. 2, J. Frame. 3, T. Rule. 4, T. Imrie. *hc.* T. Rule; T. Hawley; T. Lockhart, Kirkcaldy.

TUMBLERS.—Medal, A. Johnstone. 2, T. Hawley. 3, J. Fielding, jun. Rochdale. 4, D. Brach. *hc.* T. Imrie, Ayr; H. Yardley, Birmingham; J. E. Spence, Broughty Ferry.

CARRIERS.—Medal, J. Chadwick, Bolton-le-Moors. 2, H. Yardley. 3, A. G. Macneil. 4, A. Johnstone.

ANY OTHER VARIETY.—Medal, A. Crosbie (Letz). 2, T. Rule (Trumpeters). 3, J. Fielding, jun. 4, A. Jackson (Dragon). *hc.* A. Johnstone (Frill-back); W. H. Tomlinson (Barbs); J. Chadwick (Owls and Barbs); W. Burns (Owl); T. W. Kelbourne, Bishop Auckland; T. Hawley, Bradford; J. Frame; J. M. D. Brown (Trumpeters).

SELLING CLASS.—*Cock.*—1, J. M'Gill, Elie. 2, W. H. Tomlinson. 3, W. Brydone. 4, T. Imrie. *hc.* G. Meek; J. Grant; T. Hawley. *Hen.*—1, J. M'Gill. 2, T. Hawley. 3, J. G. Dunn. 4, A. Johnstone.

RABBITS.

LOP-EARED.—*Buck.*—1, G. Johnson. 2, J. Irving, Blackburn. 3, W. H. Webb, jun. *hc.* A. H. Easton, Hull; F. Banks, Doughty Street, London. *Doe.*—Medal, Shaw & Allison, Broomfield Park, Sheffield. 2, T. C. & H. Lord, Huddersfield. 3, A. H. Easton. *hc.* G. Johnson.

HIMALAYAN.—Medal, W. H. Tomlinson. 2, J. Baron, jun. 3, W. Burns. *vhc.* W. H. Tomlinson; J. Boyle, jun.; H. Cawood. *hc.* A. H. Easton; S. G. Hudson, Hull; W. Burns.

SILVER-GREY.—1, S. Ball. 2, J. Irving. 3, W. Burns. *hc.* J. Boyle, jun.; A. H. Easton; S. G. Hudson; T. C. & H. Lord.

ANGORA.—1, W. Burns. 2, T. Dawson, jun. 3, J. Baron, jun., Rochdale. *hc.* J. Boyle, jun.; A. H. Easton; J. Brown, Edinburgh.

ANY OTHER VARIETY.—1, J. Boyle, jun. (Dutch). 2, W. Donkin (Dutch). *hc.* A. H. Easton (Dutch). *vhc.* J. Boyle, jun. (Belgian Hare); S. Butterworth, Rochdale (Dutch). *hc.* W. H. Tomlinson (Dutch).

The Judges were—for the large varieties of poultry, J. Dixon, Esq., Bradford; and for Game, Game Bantams, Selling Classes, Pigeons and Rabbits, Mr. E. Hutton, Pudsey.

CARRON, STENHOUSEMUIR, AND LARBERT ORNITHOLOGICAL ASSOCIATION.

THE annual Exhibition was held in the Drill Hall, Stenhousemuir, on the 22nd and 23rd inst. There were about 200 entries for poultry, 40 for Pigeons, and 105 for Canaries.

SPANISH.—Special, 1, 3, and *hc.* W. C. Hardie, Carron. 2, D. M'Beath, Sunny-law, Bridge of Allan.

DORKINGS.—1, W. Weir, Inches, Falkirk. 2, Mrs. Morrison, Stirling. 3, A. Carswell. *Chickens.*—Special and 1, J. Fotheringham, Millquarter, Pleau. 2, J. Weir. 3, J. Turnbull, Carnock. *hc.* S. Bell, Castleton, Pleau; A. Carswell, Stenhousemuir.

BRAHMAS.—Special, 1, and 3, W. Weir. 2, J. B. Cochrane, Stenhousemuir. *hc.* G. Giesicht, Todhill, Falkirk. *Master R. Cochrane, Stenhousemuir.*

COCHIN-CHINA.—Special and 1, J. Weir, Falkirk. 2, R. Williamson, Osgang, Grangemouth. 3, R. Galloway, Pleasance, Falkirk.

HAMBURGERS.—*Spangled.*—1, J. Barron, Stirling. 2, R. H. Macanlay, Perth. 3, J. Armstrong, Stirling. *Pencilled.*—Special and 1, J. Barron. 2, Dr. J. Dunlop, Clackmannan. 3, J. Ferguson, Clackmannan. c, P. Langlands, Clackmannan.

DUNES.—Special, 1, and *hc.* D. Harley, Edinburgh. 2, J. B. Cochrane. 3, T. W. Mitchell.

SCOTCH-GREYS.—1, 2, and 3, A. Binnie, Grahamston.

BANTAMS.—*Game.*—1, T. H. Hayes, Barrhead. 2, W. Waddell, West Carron. 3, G. K. Scobie, Beveridgewell, Dunfermline. *hc.* Master W. C. Hardie, Carron. c, R. T. Gemmill, Glasgow. *Any other variety.*—1, J. A. Demster, Stirling. 2, Miss B. Parker. 3, J. Rutherford, Nochnairnie, Auchtermuchty.

DUCKS.—1, A. Carswell. 2, J. Weir, Rosehill.

TURKEYS.—1 and *hc.* J. Webster, Carronside. 2 and c, W. Weir. 3, A. Carswell.

ANY OTHER VARIETY.—1, Mrs. La'ham. 2, A. Carswell. 3, A. Wylie.

SELLING CLASS.—*Cocks.*—1, J. Fotheringham. 2, T. W. Mitchell, Perth. 3, J. Malcolm, Langton, Falkirk. *Hens.*—1, Master R. Cochrane, Stenhousemuir. 2, J. Fotheringham. 3, R. Williamson. *hc.* J. Malcolm; J. Henderson, Catlog, Vennel, Perth. c, J. Morrison, Alloa.

PIGEONS.

PUTTERS.—1, A. Robb, Alloa. 2, A. Glass, Alloa. 3 and *hc.* J. Duncan, Carron.

FANTAILS.—1, A. Johnstone. 2, A. J. McNeil. 3, G. Meek, Denny.

TUMBLERS.—*Common.*—1 and 3, G. Meek. 2, A. Robb. *hc.* A. Johnstone, Bathgate.

ANY OTHER VARIETY.—Special, 1, 2, and c, A. Johnstone (Almonds, Frill backs, and Swiss Pigeons). 3, J. Weir, Rosehill (Antwerp Carriers). *vhc.* Brown (Trumpeters).

CANARIES.

YELLOW.—*Cocks.*—1, T. Scott, Carlisle. 2, W. Mochrie, Lanark. 3, J. Halley, Carron. *Hens.*—1, G. Meek, Denny. 2, T. Scott. 3, D. Duncan. *hc.* J. Bertram, Leith.

BUFF.—*Cocks.*—1, W. Muirhead, Alloa. 2, J. Barr, Glasgow. 3, J. Main, Cannelton. *Hens.*—1, D. Duncan. 2, J. Ritchie, Renton. 3, R. Hunter, Galashiels. *hc.* J. Anderson, Slamanau.

PIEBALD.—*Yellow.*—*Cocks.*—1, T. Scott. 2, G. Meek. 3, J. Bertram. *Hens.*—1, R. Hunter. 2 and 3, D. Duncan. *hc.* J. Bertram.

PIEBALD.—*Buff.*—*Cocks.*—1, T. Scott. 2, J. Halley, Carron. 3, R. Baird, Alloa. *hc.* D. Duncan. *Hens.*—1, J. Sim, Grangemouth. 2, T. Scott. 3 and *hc.* A. Russell, Glasgow.

The Judges were Messrs. Brown, Perth, and M'Naughton, Kilmarnock. *Canaries:* Mr. Reid, Greenside, Edinburgh; and Mr. James Graham, Kilmarnock.

NORTHERN COUNTIES PIGEON SHOW.

On the 16th inst. the third annual Exhibition of Pigeons, in connection with the Northern Counties Columbarian Society, was held at Belle Vue Gardens, Manchester. The Show was not only more successful than either of its predecessors, but the finest and largest that had been held in England this year. Particular mention may be made of the Carriers, Turbids, Jacobins, English Owls, and Antwerps. It is long since such an excellent collection of Antwerps was brought together at any show, and the Judges passed the highest eulogiums on the birds. The Selling class was also very good. Great satisfaction was expressed at the arrangements made for the Show by Messrs. Jennison. With the exception of the Selling class, the whole of the birds were shown in a new kind of pen, on the bee-hive principle, constructed of wire. The pens were erected on raised stands, about 5 feet high, and they were relieved by a tasteful display of plants. Last year the number of pens was 250, while this year it was 359. Below we give a list of the prizewinners. Many of the birds that did not gain prizes were highly commended.

CARRIERS.—*Black or Dun.*—*Cock.*—1 and 2, C. E. Duckworth. *Hen.*—1, J. Chadwick. 2, J. Stanley. *Any other Colour.*—*Cock.*—1, Cup, and 2, C. E. Duckworth. *Hen.*—1 and 2, C. E. Duckworth. *Any Colour.*—*Young.*—1, C. E. Duckworth. 2, J. B. Buckley.

PUTTERS.—*Cock.*—1, T. H. Ridpeth. 2, J. W. Townson. *Hen.*—1, T. H. Ridpeth. 2, J. W. Townson.

OWLS.—*Foreign.*—1 and 2, J. Fielding, jun. *Any other Colour.*—1, Cup, and 2, J. Fielding, jun.

MOTTLES.—*Short-faced.*—1, J. Fielding, jun. 2, W. Lumb.

BALDS OR BEARDS.—*Short-faced.*—1 and 2, J. Fielding, jun.

ANY OTHER VARIETY.—*Short-faced.*—1, J. Fielding, jun.

BARBS.—*Black or Dun.*—1 and Cup, J. Fielding, jun. 2, J. Stanley. *Any other Colour.*—1, J. Firth. 2, W. Justice. *Any Colour.*—*Cock.*—1, J. Fielding, jun.

JACOBINS.—*Red.*—1, T. Newell. 2, T. H. Ridpeth. *Yellow.*—1 and 2, E. E. M. Roys. *Black.*—1 and Cup, T. H. Ridpeth. 2, E. E. M. Roys. *Any Colour.*—*Cock.*—1, E. E. M. Roys. 2, W. Kitchen. *Hen.*—1, E. E. M. Roys. *Young.*—1, E. E. M. Roys. 2, J. Stanley.

TURBIDS.—*Blue or Silver.*—1, J. Fielding, jun. 2, T. Newell. *Red, Yellow, or Black.*—1 and Cup, J. Fielding, jun. 2, A. Mangnall. *Any Colour.*—*Cock.*—1, J. Fielding, jun. 2, J. W. Townson. *Hen.*—1, J. Fielding, jun. *Young.*—1, T. Newell. 2, J. Fielding, jun.

OWLS.—*English.*—*Blue.*—1, A. Mangnall. 2, J. Chadwick. *Silver.*—1 and Cup, A. Mangnall. 2, J. Chadwick. *Any Colour.*—*Cock.*—1, W. Gamon. 2, J. W. Townson. *Hen.*—1, A. Mangnall. 2, W. Gamon. *Young.*—1 and 2, A. Mangnall.

FANTAILS.—1, T. H. Ridpeth. 3, J. H. Cryer. *Cock or Hen.*—1, T. H. Ridpeth. 2, J. W. Townson.

NUSS.—1 and Cup, T. H. Ridpeth.

TURBIDERS.—1, W. Kitchen. *Young.*—1, W. Gamon.

DRAGONS.—*Blue or Silver.*—1 and Cup, T. H. Ridpeth. 2, J. Holland. *Any other Colour.*—1, J. Holland. 2, W. Hill. *Any Colour.*—*Young.*—1, J. B. Buckley. 2, J. Holland.

DRAGON.—*Blue or Silver.*—*Cock.*—1, J. Holland. 2, J. B. Buckley. *Hen.*—1 and 2, J. Holland. *Any other Colour.*—*Cock.*—1, J. Holland. 2, A. Jackson. *Hen.*—1 and 2, J. Holland.

MEALIES.—*Short-faced.*—*Red or Blue Chequered.*—1, W. Justice. 2, J. Taylor. *Meatles.*—1 and Cup, W. Justice. 2, J. Stanley. *Any other Colour.*—1, W. Gamon. *Any Colour.*—*Cock.*—1, W. Gamon. 2, J. Taylor. *Hen.*—1, J. Stanley. 2, J. Taylor. *Young.*—1, J. Taylor. 2, J. Stanley.

ANTWERPS.—*Long-faced.*—*Red or Blue Chequered.*—1, W. Justice. 2, P. McDonald. *Meatles.*—1, W. Justice. 2, J. Allen. *Any other Colour.*—1, W. Justice. 2, J. Allen. *Any Colour.*—*Cock.*—1, R. Marshall. 2, W. Justice. *Hen.*—1, W. Justice. 2, J. Allen. *Young.*—1, W. Gamon. 2, J. Allen. *Flying.*—1 and Cup, W. Justice. 2, P. McDonald.

BALDS.—*Long-faced.*—*Blue or Silver.*—1, A. Jackson. 2, T. H. Ridpeth. *Red or Yellow.*—1 and 2, W. R. Haycraft. *Black.*—1, W. R. Haycraft. 2, T. H. Ridpeth.

BEARDS.—*Long-faced.*—1, T. H. Ridpeth.

MOTTLES.—*Long-faced.*—1, T. H. Ridpeth. 2, W. R. Haycraft.

ANY OTHER VARIETY.—1, W. Lumb. 2, W. Kitchen.

SELLING CLASS.—*Pair.*—1, T. H. Ridpeth. 2, J. Taylor. *Single.*—1, E. E. M. Roys.

The Judges were Messrs. Robert Fulton, London; Joseph Williams, Manchester; and Robert Chadwick, Oldham.

MAIDSTONE POULTRY SHOW promises to be a good one. The list of patrons and the list of prizes indicate that the promoters of the Show are well supported. Amongst other prizes Lady Holmesdale has given a ten-guinea cup to be competed for in Dorkings, a class of birds she was very successful with at the various shows at which she exhibited prior to relinquishing them in 1867, and we expect that some of the offspring of her well-selected stock still lingers in the neighbourhood, although her ladyship no longer exhibits. Last year there was a very fair collection of most kinds of poultry at the Maidstone Show,

although the competition was restricted to the county; but on this occasion it has (and we think wisely too) been made open to all England. Mr. E. Goodwin, of Bleak House, Thornhill, Maidstone, the Secretary, and his associates, will do their best to take care of the birds.

KILMARNOCK POULTRY SHOW.

It is now generally admitted by fanciers that this Show is to be considered the best in Scotland, for while it may be surpassed in a single section by one or two shows confining their attention solely to one department, it is now certainly not equalled by any having the "feathered fancies" so fully represented.

The poultry numbered 395 pens, and were divided into twenty-three classes, open to birds of any age, and in every class four prizes required to be awarded, with, in addition, a special prize for the best cock or cockerel, sometimes confined to one class, and in other cases extending over two or three. In the *Spanish*, although not quite equal to what they had been in former years, the first-prize pen of chickens at the late Newcastle Show only succeeded in getting commended, all the other prizes going to local fanciers. *Brahmas* were open to any colour, but no *Light* were entered. As a general rule the birds were in bad feather. Both in *Spanish* and *Brahmas* the special prize for the cock was awarded to birds so badly matched that the pen was not otherwise mentioned in the prize list. *Cochins*, open to any colour, the first prize went to Bufts, the second to Part-ridge, the third to Whites. The class as a whole was very superior, and the first-prize pen, to which was also awarded the special prize for the best cock, was believed to be the best ever seen here. *Dorkings*, open only to Coloured or Silver-Grey, were a class in which the Judge said he had never previously seen so many fine birds marred with the defect of being "sooty-footed." *Scotch Greys* were not by any means a meritorious class, the best coloured birds being in pen 69, but evidently too young, and not sufficiently filled-out to compete in an adult class. One of the prizes was awarded to a pen in which the cock had no sickle feather. If we are not mistaken, the same bird was a winner at the late Johnstone Show. *Game* fowls, any colour, were not so good a class as usual at this Show. *Brown Reds* won the prizes. There was, however, a very excellent pair of *Duckwings* exhibited, but the cock's eyes did not match in colour, and he inclined to carry his tail rather high. *Golden-spangled Hamburgs* were a capital class, the cock in the first-prize pen also winning the special prize for the best cock, which he well deserved, even although deficient in striping on the upper half of his back, and not too well spangled on the breast. The hens as a rule were not more than average, but the pens were mostly well-matched, and the prizes seemed to go mostly to birds darker in the ground colour than is usual with *Scotch* judges; this being considered the more singular, seeing that in the next class, that of *Golden-pencilled Hamburgs*, it has been remarked that both with Mr. Teebay and Mr. Hewitt the prizes are given to birds lighter in the ground colour than *Scotch* judges fancy. *Silver-spangled Hamburgs* contained many birds of fine shape, but amongst prize hens some of them had spangles so large as almost to make them appear black. *Silver-pencilled Hamburgs* were a better class than usual at this Show, where they have never been by any means strong; and *Black Hamburgs*, being a new class, was not a large one, as they are very little kept in the neighbourhood. In regard to the *Hamburg* classes as a whole, a vast amount of carving was easily seen on the combs, and it was thought by some parties that the Judge might have been a little more severe in dealing with some cases of this nature. *Black Red Game Bantams* were the largest class in the Show, as usual, and contained very few bad birds, although a considerable number were probably a little too large. In this class the first-prize cock, not having been entered for the special prize offered between this and the next class, it was awarded to the second-prize bird. *Game Bantams*, any other variety, was a fair class, the first prize going to *Duckwings* and the second to *Piles*. A single *Duckwing* cock entered for the special prize by Mr. E. Newbitt only arrived on the second day of the Show, otherwise it is the opinion of many competent judges that he would certainly have carried off the prize. In *Black or White Bantams*, the *Blacks* were good and carried off all the prizes; the *Whites* indifferent. *Bantams*, any other variety, call for very special remark, the first prize being won by a pair of the very rare *Cochin Bantams*. The second was won by a pair of *Silver-laced Sebrights* of the very fine clear light-ground colour which, we have the authority of both Mr. Hewitt and Mr. Teebay for saying, is scarcely ever seen out of this district. The birds referred to had, however, the other points of a *Sebright* of a higher order than usual in addition to their colour; and in the hands of a fancier possessed of the enthusiasm of their owner, we feel certain that the fame of the district for birds of this breed is not likely to decay. The third prize went to *Golden Sebrights*, of which there were a number of pairs; but as a general rule these birds, although finely laced, were deficient in style and carriage. The first prize went to *Japanese*.

Mr. Robertson, whose *Ducks* are winners at most of the *Scotch* shows, carried off first and second prizes both in the *Aylesbury* and *Rouen* classes; and in *drake* and *Duck*, any variety class, which was one of the most attractive in the Show, the first prize went to *Mandarins*, the second and third to *Carolinas*, and fourth to *Shells*.

Amongst the *Geese* the *White* were better than the *Dark*; and a pair of *White Spanish* were exhibited, a kind which, we are informed, have not been seen at shows for some time past.

In the *Selling* class the first prize fell to *Game*, second to *Crève-Cœurs*, third to *White Dorkings*, and fourth to *Game*.

We shall report on the *Pigeons* in our next.

SPANISH.—1 and 2, A. Walker. 3, and 4, A. Robertson. Special, H. Paton. c, J. Bowness.

BRAMA POOTRAS.—1, T. Barker. 2, R. Brownlie. 3, G. Willison. 4, H. Pickles. Special, Lady Bolton. hc, J. H. Pickles. c, E. Walton.

COCHIN-CHINAS.—1 and Special, T. Bruce. 2, H. Lloyd, jun. 3, R. Reed. 4, J. Drinnan. hc, J. Pollock; J. W. Taylor. c, Rev. R. Storey; H. Lloyd, jun.

DORKINGS.—Coloured or Silver-Grey. 1 and Special, H. Pickles. 2 and 3, R. Reed. 3, Countess of Tankerville. hc, T. Smellie, jun. A. J. Mutter.

SCOTCH GREYS.—1, J. Taylor. 2, J. Christie. 3, W. Copland. 4, A. Yendall. c, H. M'Leachie.

GAME.—1 and Special, R. Stewart. 2, D. Harley. 3, J. Partington. 4, J. W. Taylor. hc, R. Clark. c, K. Bryden; G. Williamson; J. B. Cochran.

HAMBURGS.—Golden-spangled. 1 and Special, T. Boulton. 2, R. H. Ashton. 3, T. Walker, jun. 4, Countess of Tankerville. hc, H. Pickles. J. Deans. c, J. Holden; A. Frisken. Golden-pencilled. 1 and Special, J. Bowness. 2 and hc, Countess of Tankerville. 3, J. Ashworth. 4, H. Pickles. c, J. Wilson.

HAMBURGS.—Silver-spangled. 1 and Special, Countess of Tankerville. 2, H. Pickles. 3, G. & J. Duckworth. 4, J. Ashworth. hc, J. Bowness; H. Stanworth. c, J. Holburn. Silver-pencilled. 1, J. Webster. 2, J. Bowness. 3, J. Ashworth. 4, Countess of Tankerville.

HAMBURGS.—Black. 1, Stott & Booth. 2, Countess of Tankerville. 3, T. Walker, jun. 4, H. Pickles. c, J. Wilson.

POLANDS OR CREVE-CŒURS.—1 and Special, W. A. Orr. 2, Edmondson and Wright. 3, A. Wyllie. 4, J. Kirkwood. hc, Countess of Tankerville; J. Forsyth; J. Partington. c, R. Linton.

GAME BANTAMS.—Black-breasted or other Reds. 1, D. Hunter. 2 and Special, W. Rogers. 3, R. Youll. 4, J. Holburn. hc, T. Barker; Bellingham & Gill. c, W. Copland; A. Wilson; J. Robertson.

GAME BANTAMS.—Any other variety. 1, R. Youll. 2, J. Archibald. 3, D. Hunter. hc, J. Torbock. c, J. Harrison; Bellingham & Gill.

BANTAMS.—Black or White. 1, J. Lochhead. 2, W. H. Robinson. 3, R. H. Ashton. 4, J. Currie. hc, T. S. Turner.

BANTAMS.—Any other variety, not Game. 1 and Special, H. B. Smith. 2, D. McNaught. 3, E. Walton. 4, J. Archibald. hc, Rev. H. Fairlie; H. Yardley; J. Tomlinson; J. Lamberton; E. Walton; E. Boyle; A. Johnstone. c, R. H. Ashton; Miss C. E. Frey; T. C. Carver.

ANY OTHER VARIETY.—1 and 3, Rev. H. Fairlie. 2, R. Cron. 4, J. Ashworth. hc, J. Lambie; A. Pettigrew. c, O. E. Cresswell.

DUCKS.—Aylesbury. 1 and 2, A. Robertson. 3, J. Reid. 4, J. Meiklem. c, J. Conkie. Rouen. 1 and 2, A. Robertson. 3, J. Newton. 4, A. Robertson. Any other variety. 1, Special, and 2, H. B. Smith. 3, J. Robertson. 4, Countess of Tankerville. hc, H. Yardley; J. Bowness; J. Robertson.

TURKEYS.—1, J. Manson. 2, W. Kerr, jun. 3, F. J. Turner. hc, R. Mackie; J. Manson.

TURKEYS.—1, T. B. Andrews.

SELLING CLASS.—1, J. Bowness. 2 and Special, W. A. Orr. 3 and 4, R. Cron. c, Countess of Tankerville; Miss M. H. Boyle; A. Frisken; R. Reed.

PIGEONS.

POUTERS.—Black or Blue. 1, Special, and 2, J. Mitchell. 3, J. Millar. 4, H. Thomson. hc, W. Mushat. c, J. Millar. 1, Special, and 2, J. Mitchell. 3, J. Millar. 4, J. Mitchell. T. Yuill. c, D. M'Naught. J. Mitchell.

POUTERS.—Any other colour. 1, T. Yuill. 2, Master R. H. Gibson. 3, J. Mitchell. 4, D. M'Brade. hc, J. Millar. D. M'Naught. c, Miss E. M. Beveridge; W. Barclay. Hen. 1, H. Thomson. 2 and 4, J. Millar. 3, T. Yuill. hc, J. Millar; Master H. Gibson. c, Miss E. M. Beveridge; T. Yuill.

CARRIERS.—Cock. 1 and Special, G. Brown. 2, J. Mair. 3, D. Lawrie. 4, J. Millar. hc, J. M'Crace; D. Lawrie. c, J. Kerr; T. Yuill. Hen. 1, J. Millar. 2, E. C. Stretch. 3, J. & W. Towerson. 4, A. Richmond. hc, D. Lawrie; J. and W. Towerson. c, J. Dunlop; J. Kerr.

CARRIERS.—Any other variety. 1, D. Lawrie. 3 and 4, J. Dunlop. hc, D. Lawrie. c, G. Brown. c, J. Millar; T. Waddington.

TUMBLERS.—Short-faced. 1 and Special, Master J. Millar. 2, J. Millar. 3, Master A. Millar. 4, Miss M. S. Millar. hc, J. Millar; A. Johnston. c, R. and J. Anderson; T. Yuill.

TUMBLERS.—Common. 1, A. Millar. Kilmarnock. 1, T. Baird. 2, R. Blair. 3, W. McClive. 4, R. G. Teebay. hc, R. G. Teebay; Miss E. M. Beveridge. c, R. Thomson; Imrie.

FAN-TAILS.—1 and Special, R. Blair. 2, J. Laird. 3, J. H. Watkins. hc, J. C. Renshaw. c, T. Yuill.

TRUMPETERS.—1, J. Millar. 2, J. & W. Towerson. 3, 4, and c, Miss E. M. Beveridge.

JACOBINS.—1 and Special, T. Imrie. 2, R. Barrett. 3, T. Waddington. 4, T. Baird. hc, W. J. Brydone. A. Yendall. c, O. E. Cresswell; J. & W. Towerson.

FAN-TAILS.—1 and Special, R. Blair. 2, J. Laird. 3, J. H. Watkins. hc, J. C. Renshaw. c, T. Yuill.

TURBETS.—1 and 4, J. G. Orr. 2, R. & J. Anderson. 3, T. Smellie, jun. hc, Mrs. J. Muir; T. Waddington. c, Mrs. J. Muir; W. Kitchen.

OWLS.—English. 1, D. Lawrie. 2, J. Ingham. 3, T. Oddie. 4, J. Walker. hc, J. Dunlop. c, D. M'Whitney; J. & R. Anderson.

NUNS.—1 and c, T. Imrie. 2, T. Baird. 3, J. Murray. 4 and hc, J. B. Bowdoin. Common. 1, J. M'Crace. 2, A. Gray. 3, J. Kerr. 4, J. Wilson. hc, D. Johnston, jun. c, J. M'Crace.

ANY OTHER VARIETY.—1, A. Johnston. 2 and Special, J. & W. Towerson. 3, J. H. Watkins. 4, M. Ord. hc, T. Imrie; R. & J. Anderson; J. & W. Towerson. c, R. Kitchen; A. Hutton; J. & W. Towerson; W. Kitchen; W. & A. Crawford.

SELLING CLASS.—1, J. Murray. 2, J. G. Orr. 3, A. Johnstone. 4 and Special, W. J. Brydone. hc, J. H. Watkins; T. Imrie. c, W. McClive; T. C. Taylor.

CANARIES.

YELLOW.—Clean. 1 and Special, A. Kelley. 2, W. Wright. 3, W. M'Luckie. 4, J. Young. Hen. 1, D. Reid. 2, D. Dick. 3, A. Kelley. 4, H. Davidson.

BUFF.—Clean. 1, M. Adam. 2, W. Love. 3, T. Pate. 4, H. Davidson. Hen. 1, R. Crawford. 2, A. Lyon. 3, A. Kelley. 4, W. Love.

YELLOW.—Piebald. 1, M. Adam. 2, R. Baxter. 3, H. Adair. 4, G. Hamilton. Hen. 1 and Special, R. Brydone. 2, J. Yuill. 3, D. Holden. 4, A. Robertson.

BUFF.—Piebald. 1, J. Dougal. 2, A. Lyon. 3, A. Borland. 4, W. Wright. Hen. 1, H. Adair. 2, A. Borland. 3, W. Smart. 4, D. Holden.

GOLDENFCH MULE.—Yellow. 1, W. Hutton. 2, A. Dunlop. 3, W. Laugland. Buff. 1, Mrs. Goudie. 2, Miss E. Robertson. 3, W. Wilson.

GOLDFINCH.—1 and 3, T. Conn. 2, R. Gray.

SELLING CLASS.—1, W. Miller. 2, W. Smart. 3, W. Grieve.

ANY OTHER HOME OR FOREIGN BIRD.—1 and 2, T. Yuill. 3, C. Aird.

RABBITS.—*Fancy*.—1, W. H. Webb, jun. 2 and 3, A. Taylor. 4, W. Campbell. *Common*.—1, M. Robertson. 2, A. H. Craufurd. 3, J. Graham. 4, J. Garven.

JUDGES.—*Poultry*: Mr. E. Hewitt, Eden Cottage, Sparkbrook, near Birmingham. *Pigeons, &c.*: Mr. W. B. Tegetmeier, Finchley, London. *Canaries, &c.*: Mr. T. Buchanan, 108, Argyle Street, Glasgow; Mr. R. Paterson, Cochran Cottage, near Howwood; Mr. J. Mair, Kilmarnock; Mr. C. Aird, Kilmarnock.

DERBY ORNITHOLOGICAL SOCIETY'S SHOW.

THIS Society's fifteenth annual Exhibition was held on the 23rd and 25th inst., in the Corn Exchange, Derby. The following is a list of the awards:—

BANTAMS.—1, H. Shumach, Southwell. 2, *vhc*, and *c*, F. Sale. *hc*, A. Ashley, Worcester; E. Bell, Burton-on-Trent.
ANY OTHER VARIETY.—1, C. H. Bakewell (Brahma). 2 and *hc*, A. Ashley, *vhc*, G. Brentnall, Morledge, Derby (Black Red Game). *c*, R. Curzon (White Brahma); F. Sale.

YOUNG BIRDS.

BELGIAN.—*Clear Yellow*.—1, J. Clarke, Derby. 2, J. N. Harrison, Belper. *Clear Buff*.—1, J. N. Harrison.
BELGIAN.—*Marked Yellow*.—1, J. N. Harrison. 2, E. Merrin, Spondon. *Marked Buff*.—1, J. N. Harrison.

BELGIAN.—*Variegated Yellow*.—1, J. Clarke. 2, E. Merrin. *Variegated Buff*.—1, J. N. Harrison.
NORWICH.—*Clear Yellow*.—1, E. Orme, Derby. 2, J. Bexon, Derby. 3, H. Johnson, Derby. 4, J. Judge, Derby. 5, A. Wallis, Derby. *vhc*, C. Legge, Derby. *hc*, J. Marshall, Derby. *c*, J. E. Edge, Derby. *Clear Buff*.—1, J. Bexon. 2, J. Judge. 3, E. Orme. 4, G. Colbourne, Derby. 5, C. Merrin. *vhc*, S. Cholerton. *hc*, C. Legge. *c*, W. Sherwin, Derby.

NORWICH.—*Marked Yellow*.—1, E. Orme. 2, J. Judge. 3, J. Clarke. 4, C. Legge. 5, C. Merrin. *vhc*, W. Sherwin. *hc*, H. Johnson. *c*, J. Marshall. *Marked Buff*.—1, J. Clarke. 2, J. Judge. 3, W. Sherwin. 4, J. W. Lamplough, Derby. 5, E. Orme. *vhc*, C. Markham, Derby. *hc*, J. Clarke. *c*, J. Marshall.

NORWICH.—*Variegated Yellow*.—1, J. Judge. 2, J. Clarke. 3, W. Sherwin. 4, E. Orme. 5, J. Clarke. *vhc*, G. Colbourne. *hc*, S. Cholerton. *Variegated Buff*.—1, S. Cholerton. 2, E. Orme. 3, B. Macconnell. 4, J. G. Edge. 5, J. Bexon. *vhc*, J. Stokes. *hc*, W. Sherwin. *c*, C. Legge.

NORWICH.—*Evenly Variegated Crested Yellow*.—1, H. Johnson. 2, C. Legge. 3, N. Banks, Derby. *Evenly Variegated Crested Buff*.—1, J. Judge. 2, C. Legge. 3, J. Clarke.

NORWICH.—*Any other Variety of Crested Yellow*.—1, R. Nash, Derby. 2, C. Legge. 3, W. Sherwin. *Any other Variety of Crested Buff*.—1, C. Legge. 2, R. Nash. 3, J. Bexon. *vhc*, J. Durance.

LIZARD.—*Golden-spangled*.—1, J. N. Harrison. 2, J. Clarke. 3, J. W. Lamplough. *Silver-spangled*.—1, H. Macconnell. 2, J. N. Harrison. 3, J. W. Lamplough. *vhc*, J. Stokes.

CINNAMON.—*Jonque*.—1, J. W. Lamplough. 2, J. Bexon. 3, J. N. Harrison. *Buff*.—1, J. Bexon. 2, J. N. Harrison.

CINNAMON.—*Variegated or Marked Jonque*.—1, J. Judge. 2, R. Nash. 3, J. Bexon. *vhc*, J. N. Harrison. *Variegated or Marked Buff*.—1, J. Judge. 2, J. W. Lamplough. 3, J. Bexon.

MULE.—*Jonque Goldfinch*.—1, J. Judge. 2, J. Durance. *Mealy Goldfinch*.—1, J. Durance. 2, J. Stokes. 3, W. Sherwin.

MULE.—*Dark Jonque Goldfinch*.—1, J. Judge. 2, R. Nash. 3, J. Stokes. *Dark Mealy Goldfinch*.—1, J. Judge. 2, W. Sherwin. 3, J. Stokes. *vhc*, R. Nash. *hc*, J. Durance. *Any other Variety*.—1, J. Durance.

NORWICH.—*Heavily Variegated Yellow*.—1, H. Johnson. *vhc*, E. Orme. *hc*, J. Stokes. *Heavily Variegated Buff*.—1, J. Stokes. 2 and *vhc*, J. Bexon. *hc*, A. Upton.

OPEN CLASSES.

NORWICH.—*Clear Yellow*.—1, W. Holmes. 2 and *vhc*, Adams & Athersuch, Coventry. 3, Bemrose & Orme, Derby. *hc*, Adams & Athersuch; 2, Keys, Derby. *c*, J. Audley, Leicester; Bemrose & Orme. *Clear Buff*.—1, H. Johnson. 2, J. Audley. 3, Bemrose & Orme. *vhc*, J. Judge. *hc*, W. Jerram, Nottingham. *c*, F. Woodward.

NORWICH.—*Marked Yellow*.—1, J. Audley. 2, T. Keys. 3, *vhc*, and *c*, Adams & Athersuch. *hc*, S. Over, Coventry. *Marked Buff*.—1 and *c*, Adams & Athersuch. 2 and *vhc*, S. Over. 3, Bemrose & Orme. *hc*, A. Upton.

NORWICH.—*Variegated Yellow*.—1, 2, and 3, Adams & Athersuch. *vhc*, H. and D. Audley. *hc*, J. Judge. *c*, G. Colbourne. *Variegated Buff*.—1, 2, and *vhc*, Adams & Athersuch. 3, H. and D. Audley. *hc*, Bemrose & Orme. *c*, W. Smith.

NORWICH.—*Yellow Crested*.—1, Bemrose & Orme. 2, G. Cox. *vhc*, G. Dolman, Nottingham. *Buff Crested*.—1, J. Goode, Leicester. 2, W. Holmes.

BELGIAN.—*Clear, Ticked, or Variegated Yellow*.—1, J. Turner, Birmingham. 2, J. N. Harrison. *vhc*, J. Brown, jun. Penrith. *Clear, Ticked, or Variegated Buff*.—1, J. Brown, jun. 2 and *vhc*, J. Turner.

LIZARD.—*Golden-spangled*.—1 and *vhc*, R. Ritchie. 2, J. Taylor, Middlesborough. *hc* and *c*, J. N. Harrison. *Silver-spangled*.—1, J. Taylor. 2 and *vhc*, R. Ritchie. *hc*, Greenwood & King, Leicester.

CINNAMON.—*Jonque*.—1, J. N. Harrison. *Buff*.—1, J. N. Harrison. 2, G. Cox. *vhc*, W. Stamford, Northampton. *hc*, J. G. Edge. *c*, C. Hillier.

GOLDFINCH MULES.—1, J. Brown, jun. 2, M. Burton. *vhc*, J. Goode. *hc*, W. Holmes. *c*, T. Keys.

GOLDFINCH.—1, J. N. Harrison. 2, E. Hewitt, Northampton.

LINNET.—*Brown*.—1 and *vhc*, T. Keys. 2, G. Fisher, Derby.

BRITISH BIRDS.—*Any other Variety*.—1, J. N. Harrison (Brambling). 2, J. Fincher, Derby (Thrush). *vhc*, G. Cox (Chaffinch). *hc*, E. Newton, Derby (Bullfinch). *c*, H. Winson (Thrush).

PARROTS.—1, H. Kide, Derby. 2, T. Keys.

SELLING CLASS.—1, Bemrose & Orme (Variegated Yellow). 2, J. Bexon (Clear Yellow Norwich). 3, F. Woodward, Derby (Yellow Variegated). *vhc*, A. Upton (Variegated Yellow and Variegated Buff). *hc*, J. Martin, Northampton (Yellow Crested Norwich).

SPECIAL PRIZES.

For the most points in the first six classes of Norwich. Equal points gained by J. Judge and E. Orme.

For the most points in Clear Norwich given by R. Henson.—J. Bexon.

For most points in Cinnamon classes, given by E. Orme.—J. Bexon.

For most points in Lizard classes, given by J. Bexon.—J. N. Harrison, Belper.

For most points in Crested Norwich, given by S. Staton.—C. Legge.

For most points in Marked and Variegated Norwich, given by E. Orme.—J. Judge.

JUDGES.—*Poultry*: Mr. G. A. Crewe. *Canaries*: Mr. G. Moore, Northampton; Mr. Wynn, Northampton; and Mr. G. H. Goodwin, Derby.

NATIONAL PERISTERONIC SOCIETY.

At the meeting of this Society at Evans's Hotel, Covent Garden, on the 19th inst. there was a strong gathering of country fanciers to see the Pigeons. Amongst the most noticeable were the Almond and other Short-faced Tumblers shown by Messrs.

Jayne, Merck, and Ford, all fit to hold their own at any show. The two pens of Carriers, containing upwards of fifty birds belonging to Mr. Hedley, were sadly too crowded, but they had style, shape, and make that left nothing to desire. His pen of Barbs contained, if we mistake not, many future prizewinners, and for several of which we heard very high prices bid. The pen of Dragons, shown by Mr. Betty, were very little inferior to his cup and other winners at the Palace Show.

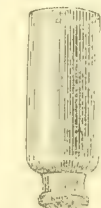
Several new members were proposed, no doubt with an intention to compete at the show for young birds, to be held on December 16th, which appears to be a great source of attraction. The Honorary Secretary, Mr. P. H. Jones, of Fulham, informed us that it has every appearance of being a great success.

BOTTLE-FEEDING.

If Mr. S. B. Fox would give a sketch of his bottles, and tell us where he procures them, I fancy many like myself would be obliged to him. I can think of no bottle but a conjurer's which would hold 2 lbs. of honey and not drown the hive as soon as it was inverted.—CHARLES J. GEDGE.

[In reply to the above, I may at once state that the only conjurer's bottles I use are those well-known glass receptacles in which Messrs. Crosse & Blackwell and others pack their various pickles, in order to conjure our appetites and digestive organs, or, which I have used in preference lately, the somewhat larger bottles now extensively employed in preserving fruits. I have occasionally used much larger ones still—viz., such as are made for sweets for confectioners' shops. These last are capable of containing many pounds of honey, and are unnecessarily large. I only allude to them to show that bottles, if of suitable shape, may be of any size.]

I have to-day filled one of my bottles with water and inverted it over an empty hive; after leaving it on a considerable time not a single drop had fallen through on the floor beneath. Leno was, of course, stretched over the mouth of the bottle previous to inverting it. A block of wood is provided of a thickness not quite so great as the length of the neck of the bottle, into which the inverted bottle is thrust, after the block has been properly adjusted over the centre of the hole in the hive, on which a small square of perforated zinc has been already placed. This block of wood is not really necessary, but it serves to prevent the bottle being knocked over. I very often do without them. The neck of the bottle must rest fairly on the zinc. Messrs. Neighbour, of Regent Street, supply bottle-feeders of their own shape, which are equally efficacious, but at the same time more expensive than the home-made ones.—S. BEVAN FOX.]



Bottle 8-9 inches high, 3 inches in diameter.



Cork 4½ inches in diameter. Hole in centre about 2 in diameter.

I NOTICE the remarks upon this subject of Mr. S. Bevan Fox in your last issue. I have failed over and over again to manage it properly. Having at last been successful, I will state my plan, in case it may be of use to other tyros like myself, as I fancy it differs somewhat from those stated in books. I fill the bottle nearly full of syrup made in the usual way, and then put over the mouth of the bottle two thicknesses of coarse leno, kept in their place by an elastic band. I cover the hole on the hive with perforated zinc, and then quickly invert the bottle and place it on the zinc. Should the bees not empty the bottle, I find it necessary to wash and well dry the leno before replacing the bottle after refilling. Neglect of this precaution has with me always resulted in the rapid escape of the syrup into the hive. The rim of the bottle should always be quite clean and dry before it is inverted. The bees rarely fail to empty the bottle during the night.—C. A. J.

CANDIED HONEY.

MANY of our correspondents inquire for a process by which honey can be prevented from candying. We know of no method absolutely successful. We have known it to be preserved two years, by heating it and sealing up air-tight. After it candies, honey can easily be reduced to the liquid form again by adding a little water and bringing it to nearly the boiling point. If it is then sealed up in air-tight jars or cans, and kept away from the influence of light, it will probably not candy again.

Some kinds of honey will candy much quicker than others. Much depends on the sources of supply, the climate, and locality. In the northern states honey candies sooner than in the south, and that obtained from cruciferous plants sooner than that from labiate flowers, and late honey candies sooner than that extracted early in the season.

W. W. Stoddard, of England, in experimenting on the nature and origin of honey, deduced the following conclusions: The nectar in flowers is simply a solution of cane sugar, formed and

provided for the nutrition of the stamens and pistils. In the honey-sac of the bee this sugar comes in contact with formic acid. He ascribes the peculiar tingling sensation at the back of the throat when much honey has been swallowed to this acid. After standing awhile grape sugar begins to form, and this continues till the whole has been converted into grape, when it is said to be candied. Acetic acid is present in candied honey, which injures the taste. The proportion of formic acid in honey must be very small indeed, as it is a burning liquid of an irritating odour—very corrosive, producing a sore wherever dropped on the skin. It derives its name from being first distilled from the red ant (*Formica rufa*).—(*American Bee-keepers' Journal*.)

OUR LETTER BOX.

STANDARD OF EXCELLENCE (J. C.).—It is not admitted as an authority, nor do we know where it can be obtained.

CRYSTAL PALACE POULTRY SHOW.—"Although the winner of three of the five cups amongst Dark Brahmas, in your list I am but mentioned as winning one, in addition to which I won the cup for the best Dark Brahma cock in Class 25, and also the cup for the best hen of same breed in Class 26.—T. F. ANSELL." [The mistake was in the Secretaries' prize list, which we copied.] "There was omitted a pen of mine that was highly commended in the Crève-Cœur cockerel class.—JOHN WATSON." "I entered a pen of poultry, and received an acknowledgment of the entrance money. Expecting to have a label sent me, I waited till Friday before the Show, but none came, so I thought I had better write for one. At the same time I enclosed thirteen postage stamps for a catalogue; but I have not received the catalogue, nor have I the stamps returned. Seeing other exhibitors treated in the same manner, I shall have to rest contented with negligent Secretaries.—E. HALL.

GUISBOROUGH BIRD SHOW (W. C.).—It must have been a local Show, as it was not advertised.

FOWLS FOR PROFIT (R. A. R.).—The most useful bird for you to keep is, in our opinion, the Brahma. They are good layers, very hardy, sit well, and are good mothers.

PLUMAGE OF ANDALUSIANS (Old Subscriber).—We prefer the dark feather. The other is much too light. You must not breed from a rose-combed bird if you wish for Andalusians. The Andalusian is a single-combed fowl.

BRAHMA PLUMAGE (W. E. B.).—We should in every way disapprove of the feather you sent us as part of the flight of a Dark Brahma. We suppose he has a twisted flight. It is incurable, and you must not breed from him, as it is sure to be hereditary. From your description the younger bird is a mass of disorders, weak, deformed, and diseased. We should not like to breed from either, be their strain never so valuable, and we advise you to discard them.

DEATHS OF FOWLS (Edmondsbury).—We are sorry to say we have heard of many such complaints as yours among fowls and Pheasants. In every case the liver is found extensively diseased. Among wild birds there is no doubt much of it is caused by insufficient feeding. This cannot be the case with your fowls. Both are affected by the sudden and frequent changes of the temperature, and the continued wet. We find camphor the best treatment, and believe it to be a cure in the early stages. According to your letter, you only feed once per day—in the evening. This is not enough, and grass yields little food at this time of the year. They should be fed directly they are let out in the morning; ground food slaked is the best. They should at mid-day have a little whole corn, and such a meal as you describe in the evening. Insufficient food would cause all the symptoms you describe.

GOOSE AND GANDER (A. B.).—The sexes can only be certainly ascertained by examination. Swans and most of the Geese have no outward mark of any kind by which they may be distinguished.

FLESH OF BLACK HAMBURGERS (Hamburgh).—We have always considered, and we believe the opinion is general, that the flesh of the Hamburgh fowl is very white. The only objection is the colour of the legs—they are always dark. We have never dressed a Black Hamburgh, but can easily imagine the stubs of the feathers are black in the skin. We have dressed the Spangled, and found their flesh juicy, tender, and well-flavoured. We believe the fault rests more with the picker of the fowl than with the fowl itself.

CATARRE IN BRAHMA (S. B. S.).—Give a good dose of castor oil (more than a tablespoonful), see that it operates freely, and then give camphor pills, and bread and ale; you must keep on till his comb becomes red. If this does not cure, you must use Bailey's pills. Discontinue the sharps.

FOWLS CROOKED-BREADED (Crooked Breast).—Crooked breasts disqualify for prizetaking. They do not spoil for laying or sitting. Good birds may be bred from such, but as a crooked breast is decidedly a sign of weakness, we should not breed from such a bird. The cause is in most instances that the birds are too highly fed, and are forced along so fast that the bones cannot support the weight of the body. In roosting, the grasp of the feet is not sufficiently powerful to steady and support the body on the perch, and the breast therefore rests upon it. Being in a cartilaginous state it adapts itself to the shape of it, and becomes crooked. Large fowls like Brahmas should not roost at the age you name. If you let them roost on the ground you will keep straight breasts.

TURKEYS BENUMBED (Geva).—Your Turkeys are suffering from the bad weather. You must administer stimulants, give them stale bread steeped in strong ale. They are subject to giddy fits in bad weather.

HOUDANS AND DORKINGS (Subscriber).—We do not believe the Dorking and Houdan have anything in common. The habits, the plumage, the colour of the legs, the non-sitting, all go to prove they have nothing in common. The fifth claw proves nothing, or it would go to justify us in saying the fifth of the blue-skinned Silky fowl proves its common origin with the Dorking. The bird you name is not too old to put to pullets, but we think it will be his last year.

WING DISEASE IN ALMOND TUMBLER HEN (V. S.).—Draw the flight feathers of the wing. By the time they have again grown all will most probably be well, unless it be a confirmed or very bad case, for which there is no cure. A hen will breed just as well; a cock so afflicted is useless for that purpose, or, indeed, for any.

STOCK-HIVE WITH COMBS PARTIALLY FILLED (W. E. S.).—Your stock-hive will keep well in a dry place if effectually closed against the intrusion of moths and other vermin. If you do not mind the honey being taken down, the comb will keep better by the hive being put over some other stock, allowing the bees free access to it. They will carry down the honey and leave the comb beautifully clean for the swarm you propose to put into it. This is always the best way to treat hives full of comb which it is thought desirable to preserve.

REMOVING HIVES INTO A BEE-HOUSE (A. Z.).—We fear you will lose many bees if you move your hives now into your bee-house; but if you must do so,

we would advise your shifting them gradually one after the other, with an interval of some days between each removal. We would give them a new floor-board, altering the entrance as much as you can, stopping-up the old one altogether, and making the bees pass out into the open air through a tunnel in the floor-board. This will attract the notice of every bee as she goes out of the hive, and cause her to examine the new position. In this way there will be the least risk of loss. Keep the bees shut-up as you propose for a day or two, and set them free on a warm still morning when the sun is shining. Disturb them a little at the time and feed them also, so as to cause as many as possible to fly out together. There will be a good deal of humming, which will attract any bees who may be off to the old stance. It is somewhat late to be feeding bees now; but, of course, "better late than never," if they are in a poor way.

HONEY CANDYING (An Old Subscriber).—Perhaps you will find an answer to your inquiries in an extract you will meet with elsewhere, taken from the American "Bee-keeper's Journal." We believe that one principal reason why the "shop honey" does not candy is simply that it is not pure. In many parts of England what is sold for honey by the rustics to grocers and chemists is a nasty mixture of honey, bee-bread, and the juices of young and old bees pounded together into the butter-like mass which spreads so smoothly upon bread. We once entered a cottage where the process was going on, from which day we have had uncomfortable stomach-misgivings at the sight of run honey other than that which is the produce of our own manipulation.

CANARY AILMENTS (Tai-koong-soo).—We did not insert the letter, because we had others sustaining an opposite opinion, but none suggesting more effective treatment.

METEOROLOGICAL OBSERVATIONS,

CAMPDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	A.M.				IN THE DAY.						Rain.
1872.	Baromet. at Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Tem- perature.		Radiation Temperature			
Nov.		Dry.	Wet.			Max.	Min.	In sun.	On grass		
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
We. 20	29.468	46.4	45.9	S.	42.7	52.5	35.9	76.1	36.0	0.150	
Th. 21	29.636	46.4	45.3	S.	43.1	55.8	41.6	81.8	37.1	—	
Fri. 22	29.396	51.2	49.1	S.	44.3	53.6	46.0	69.0	42.5	0.230	
Sat. 23	29.156	55.3	51.1	S.W.	45.2	57.0	43.2	65.3	38.6	0.142	
Sun 24	29.402	48.7	46.5	S.W.	46.3	52.2	46.6	75.6	42.8	0.020	
Mo. 25	29.386	49.0	47.1	S.	46.1	54.8	42.0	58.3	38.3	0.130	
Tu. 26	29.439	52.5	48.0	W.	46.9	55.8	47.3	69.2	43.8	0.395	
Means	29.440	49.9	47.3		44.9	54.2	43.2	70.0	39.8	0.827	

REMARKS.

20th.—Very fine morning, and till 2 P.M., when it clouded over; rain and hail at 2.30 P.M.; rain at intervals the rest of the day; lunar halo at 10.30 P.M.

21st.—Fine morning, and fair all day, though cloudy between 4 and 5 P.M.; much warmer in the evening.

22nd.—Rain in the night, but fine morning; fair all day, but very damp.

23rd.—Showery and windy all day, and till midnight.

24th.—Moderately fair all day, but not very bright for any length of time during the day.

25th.—Fair at 9 A.M., but rain before ten, and at intervals all day; very wild and windy, with heavy rain in the evening and night.

26th.—Very windy, but fair till the evening; at 7.30 P.M. heavy rain fell, and the wind was at times very violent.

Mean 9 A.M. temperature nearly 14° above that of last week, and higher with one exception than any one for the last six weeks. Rain again excessive, the total for November is already three-quarters of an inch above the average.—G. J. SYMONS.

COVENT GARDEN MARKET.—NOVEMBER 27.

BUSINESS transactions are very limited and continue to be much influenced by the weather. Common Apples and Pears are very little inquired for, the latter being far in excess of the demand; and some newly arrived Oranges from St. Michael's, of excellent quality, go far to displace them.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.	
Apples.....	½ sieve	8	0	5	0	Mulberries.....	½ lb.	0	0	0
Apricots.....	doz.	0	0	0	0	Nectarines.....	doz.	0	0	0
Cherries.....	per lb.	0	0	0	0	Oranges.....	½ 100	6	0	12
Chestnuts.....	bushel	12	0	20	0	Peaches.....	doz.	0	0	0
Currants.....	½ sieve	0	0	0	0	Pears, kitchen.....	doz.	1	0	3
Black.....	do.	0	0	0	0	dessert.....	doz.	2	0	4
Figs.....	doz.	0	0	0	0	Pine Apples.....	lb.	4	0	8
Filberts.....	lb.	1	0	1	6	Plums.....	½ sieve	6	0	9
Cobs.....	lb.	1	0	2	0	Quinces.....	doz.	1	0	2
Gooseberries.....	quart	0	0	0	0	Raspberries.....	lb.	0	0	0
Grapes, hothouse.....	lb.	2	0	5	0	Strawberries.....	½ lb.	0	0	0
Lemons.....	½ 100	6	2	0	0	Walnuts.....	bushel	15	0	30
Melons.....	each	2	0	5	0	ditto.....	½ 100	3	0	0

VEGETABLES.

		s.	d.	s.	d.			s.	d.	s.	d.
Artichokes.....	doz.	2	0	4	0	Mushrooms.....	potlie	1	0	8	0
Asparagus.....	½ 100	0	0	0	0	Mustard & Cress.....	punnet	0	2	0	0
Beans, Kidney.....	½ 100	1	0	2	0	Onions.....	½ bushel	2	0	4	0
Broad.....	bushel	0	0	0	0	pickling.....	quart	0	6	0	0
Beet, Red.....	doz.	1	0	3	0	Parsley per doz. bunches	2	0	8	0	0
Broccoli.....	bundle	0	9	1	6	Parsnips.....	doz.	0	9	1	6
Cabbage.....	doz.	1	0	1	6	Peas.....	quart	0	0	0	0
Capsicums.....	½ 100	2	0	8	0	Potatoes.....	bushel	3	6	6	0
Carrots.....	bunch	0	6	0	0	Kidney.....	do.	0	0	0	0
Cauliflower.....	doz.	2	0	4	0	Round.....	do.	0	0	0	0
Celery.....	bundle	1	6	2	0	Radishes.....	doz. bunches	1	0	1	6
Coleworts.....	doz. bunches	2	0	3	0	Rhubarb.....	bundle	0	0	0	0
Cucumbers.....	each	0	3	1	0	Salsify.....	½ bundle	0	9	1	0
pickling.....	doz.	0	0	0	0	Savoy.....	doz.	1	0	2	0
Endive.....	doz.	2	0	0	0	Scorzoneria.....	½ bundle	0	9	1	0
Fennel.....	bunch	0	8	0	0	Sea-kale.....	basket	2	0	5	0
Garlic.....	bunch	0	6	0	0	Shallots.....	lb.	0	0	3	0
Herbs.....	bunch	0	8	0	0	Spinach.....	bushel	2	0	3	0
Horseradish.....	bundle	3	0	4	0	Tomatoes.....	doz.	1	0	2	0
Leeks.....	bunch	0	2	0	0	Turnips.....	bunch	0	3	0	0
Lettuce.....	doz.	0	9	1	0	Vegetable Marrows.....	doz.	0	0	0	0

WEEKLY CALENDAR.

Day of Month.	Day of Week.	DECEMBER 5-11, 1872.	Average Temperature near London.			Rain in 43 years.		Sun Rises		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.		Clock after Sun.		Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	m. h.	m. h.	m. h.	m. h.	m. h.	Days.	m. h.	m. h.	m. h.	
5	TH	Meeting of Linnean Society, 8 P.M. ST. NICHOLAS.	49.0	35.2	42.1	25	52 af 7	50 af 3	after.			6	9	5						340
6	F		48.2	36.7	42.4	22	53 7	50 3	47 0	31 10	6									341
7	S		48.4	38.5	43.5	21	54 7	50 3	5 1	54 11	11									342
8	SUN	2 SUNDAY IN ADVENT.	46.9	33.6	40.3	19	55 7	49 3	21 1	morn.	8									343
9	M		46.7	34.9	40.8	17	56 7	49 3	37 1	13 1	9									344
10	TU	Royal Horticultural Society's Examination [of Gardeners.	47.0	32.8	39.9	26	57 7	49 3	53 1	33 2	10									345
11	W		46.5	32.6	39.5	17	58 7	49 3	10 2	50 3	11									346

From observations taken near London during forty-three years, the average day temperature of the week is 47.5°; and its night temperature 34.9°. The greatest heat was 63°, on the 11th, 1844; and the lowest cold 13°, on the 8th and 9th, 1867. The greatest fall of rain was 1.02 inch.

ASPARAGUS FORCING.



FORCED vegetables of many kinds may be said to form an important item in every garden, whether large or small. As an esteemed luxury Asparagus stands second to none. It is true Asparagus culture often comes under discussion in gardening periodicals, but I have no recollection of having seen or heard any argument in the Journal as to the best method of forcing this excellent vegetable.

As there is a great demand for forced Asparagus in almost every large establishment, and in many small ones, allow me to offer a few remarks on the subject, in the hope that some valuable information may be elicited from other correspondents. For several years in my previous situation I was expected to keep up a good supply of Asparagus from the early part of December until it could be procured from the open ground, and this I succeeded in doing by growing it on what I may term the old-fashioned way—viz., by lifting the roots from the oldest beds in the open garden, and planting them on a bed of prepared fermenting materials, over which are placed a frame and lights. That good Asparagus can be grown in this way there cannot be a doubt; but at the same time I consider it when so grown one of the most extravagant luxuries that can possibly be produced in a gentleman's garden, and for this reason—to have good roots fit for forcing, four years' growth at least are required, during which time very little can be grown that is fit, or ought, to be cut. After being forced in this way the roots are absolutely of no use, except to enlarge the size of the rubbish-heap. Notwithstanding, I think I may safely say this method is adopted in the majority of our gardens throughout the country.

The mode of forcing Asparagus which I wish to bring under the notice of your readers, and which I consider highly commendable, is that which is practised at Nynehead Court, near Wellington, Somerset, the seat of W. A. Sandford, Esq., where on several occasions I have seen it growing in great perfection on what appeared to me to be a very simple and economical principle. It is grown in beds 5 feet in width, with alleys 2½ feet in width between each bed. These alleys are sunk to about 4 feet in depth, and when forcing is commenced they are filled with fermenting material, the heat from which is conducted through the beds by 9-inch round drain tiles, which are placed about 2 feet from the surface of the beds, and at about the same distance apart. Over the surface of the beds span-roofed frames with boarded sides, 2 feet in depth, are placed, the latter allowing the application of additional linings in severe weather, during which period the roof is also kept well protected with litter. With four of these frames 4½ feet in width and 8 feet in length, and by paying due attention to the linings, &c., and by keeping them changed in pairs when required on beds opposite each other, Mr. Bray, the intelligent and persevering head gardener, is able to keep up a constant and

abundant supply for a large establishment from the early part of December until plenty can be gathered from the open ground, and that, too, with four beds 50 feet in length. These beds are, however, only forced every alternate year, so that eight beds are kept entirely for forcing purposes.

The linings in the trenches are allowed to remain there during the summer months, during which time the roots of the Asparagus in large numbers luxuriate in them. A good medium for growing Vegetable Marrows, ridge Cucumbers, &c., is also thus provided. The frames are, moreover, turned to a useful account for Melon and Cucumber growing, &c.

That the plan is not altogether a new one I am well aware, but with many, I believe, it has failed to give such satisfaction as required; that it is, however, eminently successful with Mr. Bray is evident from the fact that during the seasons of 1869 and 1870 he was awarded by the Royal Horticultural Society three special certificates for forced vegetables; and again at the same Society's meeting on March 1st, 1871, he was awarded the first prize, the chief merits for which on each occasion lay in the Asparagus. In the present year, at the Society's meeting on January 17th, Mr. Bray was awarded a cultural certificate (the first presented by the Committee) for forced Asparagus. He also received a first-class cultural certificate at the winter meeting of the Manchester Botanical and Horticultural Society, which was held on the 20th of February. This, in my opinion, is quite sufficient to prove that the system is a meritorious one. Mr. Bray attributes his success to the copious supply of liquid manure which he gives to the beds during the summer months, and to the extra care which he pays to the fermenting material to prevent it from scorching the roots.

Asparagus, growing in beds encompassed with a 4½-inch brick wall, with brick flues underneath, or what are more commonly called pigeon-hole flues, is to be seen in some gardens devoted to forcing purposes; but as a rule these means are unsatisfactory and objectionable, not only on account of the extra expense they cause, but from their liability to get deranged, and therefore to quickly get out of working order, and which cannot very well be rectified without mutilating the beds, consequently it does much damage to the established plants; but with the 9-inch drain-tile system this objection is entirely obviated, as any derangement can be easily set right. Doubtless there are a great many who have some spare lights, with box-frames, at their command who could easily sink the alleys between their established beds to the required depth, and place the drain-tiles beneath them with very little trouble. I hope these remarks will induce some to adopt this practice, and they will, I trust, in return give your readers the benefit of their experience.—THOMAS FOOTE, Gardener, Clevedon Court, Somerset.

A NEW NEW-ZEALAND DRAGON TREE.

THIS apparently new species of Cordyline or Dracæna seems to me to deserve especial attention, its stem at the

top having a tuft of long broad leaves about 6 feet long, in the manner of a Palm. It produces a larger flower on the panicle than the other species belonging to these genera. It was obtained at first by a gardener residing in this place when on a visit to our west coast gold fields about six years ago. It is now growing in his own cottage garden, and named by him *Cordylina Gouldiana*, in compliment to his late employer in Canterbury, Mr. George Gould. He states it to be the only one cultivated here in Christchurch.

I have not the least doubt that there are, like this plant, still many more treasures in store for us in unexplored parts of our southern and western alps, and in other places elsewhere both in the North and South Islands; more particularly in some parts of the North Island among the Maories, where a European foot never trod. Many new additions already, I think, could be made to the number of genera mentioned in "Forster's New Zealand Kingdom," geographically speaking, of our indigenous plants and their whereabouts.

Mr. J. C. Bidwell informs us about this genus in his pamphlet entitled "Rambles in New Zealand," published by Orr & Co., London, as far back as 1840 or 1841, that "a *Dracæna* was very common in some places, and grew into a tree 30 feet high and 2 feet in diameter. If this tree could be brought to England it would make quite a new feature in ornamental plantations. There are in all three species which would grow out of doors in England; one of them, a most beautiful species, with the leaves large and striped red and yellow, must be very hardy, as the natives said that the mountain was always covered with snow in the winter. It was growing in a little gully on the very top, where the barometer stood at 25.20 ins., thermometer 45°." I very often have the pleasure of seeing *C. Gouldiana* growing in the cottage garden by the roadside. Its leaves are just as long again as those of *C. australis* and *indivisa*. Probably the species I am now writing about may be one of the three mentioned by Mr. Bidwell. *Cordylina australis* is nearly the last relic of New Zealand vegetation we have left on the plains; it is commonly called the "Cabbage Tree" by Europeans. About their hardiness I agree with Mr. Bidwell, for this last winter we had two intensely severe frosts, which scorched all our large *Eucalypti*, and their green leaves now hang dead on the trees, giving them a very miserable appearance. Our native *Cordylines* sustained no damage. Our large *Wattles* or *Acacias* were quite killed in some places.

Mr. Bidwell, in his pamphlet, sums-up our climate better than any author I ever read on New Zealand. He writes:—"My opinion of the climate of New Zealand during the time I was there would be summed-up by the word 'raw,' and I certainly think that rawness is the principal characteristic of the air of that country, not so much, however, in winter as in summer and autumn. I have no doubt there will be quite sufficient heat for any crops which come to perfection in England, and perhaps France, but I do not think the wines, &c., will ever have the richness of those of Spain or Madeira." We often get four seasons in one day—spring in the morning, about mid-day summer, about 3 p.m. autumn, and at sunset winter. With regard to wines, we have as yet to grow our Vines under glass in cold vineries in this part of New Zealand.

Whether scientific botanists at home will allow the specific name of the *Cordylina* mentioned to continue I cannot judge. For my own part I consider it is of little real importance what name an object bears, provided it serves to distinguish that object from everything else; still, home botanists may think it bold presumption in a gardener to have done such a thing in this country.—WILLIAM SWALE, *Avonside Botanic Garden, Christchurch, Canterbury, N.Z.*

GLADIOLUS DISEASE.

My friend "W. G. S." is too wise by far to be

"As one
That smells a foul-fleshed *Agaric* in the bolt,
And deems it carrion of some woodland thing,
Or shrew or weasel."—*Gare'h and Lynette.*

Nay, he, I imagine, rather thinks this world to be one vast *Agaric*, and we "petty creatures" but the spores scattered over it. He challenges me on my remarks on the disease of *Potato* and *Gladiolus*. He says anybody can tell all about that of the former root, meaning thereby that it is of fungoid character. But with all due deference to my friend's smell-fungus perceptions, I must take leave to say I still hold to my opinion; for, 1, it is by no means clear that this is not a confounding of the *post hoc* and *propter hoc*. The eruptions on

the skin in man are not the disease, but the effects of a poison in the system. Cholera, to which he alludes, is a fell disease; but what is that poison which produces it? The mould on a decaying Apple is not the cause of the decay, but the effect; so, I take leave to say, you may detect the *Potato fungus*. But what is it—the cause of the disease or the effect of it? But suppose I take it for granted that it is the cause: how comes it that it has only been known in its virulent form for the last thirty years, although the tuber has been cultivated since the time of Raleigh, and what are the things that cause it? He asks me what is the analogy between the two? I reply, 1st, That in both it seems connected with some atmospheric condition rather than with soil; 2nd, that in both the attacks are capricious; and 3rd, that no remedy seems successful.—D., *Deal.*

SELECT ROSES ATTEMPTED TO BE CLASSED ACCORDING TO THEIR COLOURS.

SÉNATEUR VAISSE requires the names of the best three Roses in different colours. This is a very difficult thing to do, because the colour of the same Rose varies so much according to soil, cultivation, situation, season, and the time of the year, and also the stage of the flower. I will, however, do my best to answer his requisition without strict adherence to the exact number of three Roses of each colour or to the colours named. All I name are good in growth with good general attributes, unless otherwise stated. Of course they are not of equal merit, but they are good, and adapted to exhibition or garden ornamentation, or both.

White.—Madame Willermoz, Sombreuil, Acidalie. For garden ornament, Baronne de Maynard, beautiful; Marguerite Bonnet, tinted white, lovely.

Blush.—Souvenir de la Malmaison, Duchesse d'Orléans, Caroline de Sansal, Sœur des Anges, Madame Emile Boyau.

Silvery Blush.—Baroness Rothschild. For pot purposes, Princess Christian.

Flesh.—Madame Audot (Alba).

Variegated.—Eillet Parfait, the best, but tender and dwarf grower; Tricolor de Flandre, Madeline. They are all summer Roses and great beauties.

Mottled Rose.—La Volupté (Gallica).

Buff.—Madame Levet, Tea Rose, good grower and hardy.

Orange Yellow.—Gloire de Dijon.

Coppery Yellow.—Ophirie, a good wall Rose.

Golden Yellow.—Maréchal Niel, the finest of all yellow Roses.

Fine Yellows.—Céline Forestier, Triomphe de Rennes, both admirable: it is impossible to overpraise them.

Rose Colour.—Perfection de Lyon, Madame Chirard, Gloire de Vitry, Monsieur de Montigny, La Ville de St. Denis, Mons. Woolfield, Duchesse de Morny, Comte de Nanteuil, Baronne Prévost, Madame Boll, Madame Charles Verdier, Marquise de Castellane, Madame Clemence Joigneaux, John Hopper, Felix Genero.

Pink.—Marguerite de St. Amand, Comtesse de Chabillant, Baron Gonella.

Salmon Rose.—W. Griffiths, Madame Fillion.

Bishop's Purple.—Madame Jacquier.

Lake Red.—Gloire de Ducher, Jean Bart, Le Léon des Combats.

Carmine.—Duchesse de Caylus, Lord Herbert, François Lacharme.

Scarlet.—Duke of Edinburgh, Fisher Holmes, Kean (Gallica).

Fine Red.—Madame Victor Verdier, Dr. Andry, Leopold Premier, Prince Leopold (W. Paul), Sénateur Vaisse.

Vermilion Crimson.—Maurice Bernardin, Prince de Portia, Madame Julie Daran.

Fine Crimson.—Charles Lefebvre, Alfred Colomb, Marie Raby. All first-rate.

Purple.—Napoleon (Gallica), Pierre Notting, Triomphe de Paris, Baronne Pelletan de Kinkelin, and Duc de Cazes.

Maroon or Plum Purple.—Prince Camille de Rohan, Dr. Jamain, Empereur de Maroc.

Black?—The nearest to black at certain stages of the flower, according to atmospheric influences, are Souvenir de W. Wood and Xavier Olli.

Blue?—We have not this colour, but Prince Camille de Rohan, Souvenir de W. Wood, Dr. Jamain, Baron Chaurand assume a bluish tint, described by the French as *bleuâtre*.

Pure Slate.—Schismacker (Gallica). Its colour is purple; it slates on expansion.

Crimson and Maroon.—John Keynes, Baron Chaurand. Both

are very handsome; the first is large, the second smallish. The latter is one of the best dark colours.

Subject to what I have said, the selector cannot burn his fingers. The best colours for foul weather are crimson, maroon, and yellow. The light colours soil much in wet weather. Instead of getting heaps of varieties (so called), find out what are good and suitable to your situation, and accumulate those sorts. I have only 1851 Roses here. They are all first-rate and in good condition. One thousand Roses of good sorts, well looked after, will afford more satisfaction than five thousand picked at random and neglected.—W. F. RADCLIFFE.

ELECTION OF STRAWBERRIES.

[From Communications to the Rev. C. P. Peach.]

I SEND you the following, which according to my experience, and from my ground, which is of a lightish deep soil on a gravelly subsoil, are the best—viz.

In a succession of twelve sorts for large gardens—

Early Prolific,	Filbert Pine,
Vicomtesse Héricart de Thury,	British Queen,
Sir Joseph Paxton,	La Constante,
President,	Cockscomb,
Scarlet Pine,	Frogmore Late Pine,
Carolina Superba,	Cuthill's Prince of Wales.

In a succession of six, good croppers and to carry well, all having good flavour—

Early Prolific,	La Constante,
President,	Cockscomb,
Scarlet Pine,	Frogmore Late Pine.

Early Prolific being a seedling of mine, and not yet being well known, will probably not be mentioned often, but it is quite the best early Strawberry. I hope, however, shortly to introduce a still earlier sort of first-rate quality, which I propose to call Alpha, being as early as Black Prince, which is now useless, except as an early forcer and to preserve. I keep a few plants merely as a test of earliness. As to my new seedlings, then I have Semper Fidelis, a very large handsome fruit, with a good deal of Queen blood, but very hardy, and an immense cropper. This I calculate to entirely supersede all others for main crop and market purposes. I have also Enchantress, which is about a fortnight later than British Queen, and—a great deal to say—better flavoured than that or any other variety, including La Constante and Scarlet Pine. It is of good size, beautiful in colour, and a good cropper. The above have been under observation some four or five years, and I hope next season to get time to go into the subject. I have five or six others of great merit which I must keep back for the present. Thanks to one of my seedlings, Excelsior, I have had ripe fruit in the open up to ten days ago.

You will observe I have omitted Dr. Hogg from my lists. For several years running I have found it to be very tender in constitution, one-half the plants dying off fast from cockchafer grub; and the fruit, though of excellent quality, is so defective in form, that I do not think it should be admitted into any select list.—W. RODEN, *Morningside, Kidderminster.*

I HAVE resided twenty-two years in France, sixteen of them in the neighbourhood of Fontainebleau, where I had to struggle against soil and insects. My ground there was of a very light hot nature, scarcely 1 foot deep, upon a limestone subsoil. Add to this, scarcity of water, and, above all, the continual trouble of the cockchafer grub, the greatest enemy to Strawberries, and you can form an idea of my love of and perseverance in this culture. I had, however, finally to give it up as a bad job, and removed to Beauvais, where I took an old meadow with alluvial soil, and partly stony and wet. Here my pets gave me more satisfaction, inasmuch as I had water plentifully and no grubs, and without that folly—war, would very likely still be there. I found it very uncomfortable to live in France after peace was restored, people becoming more mad from day to day, and resolved to return to my native city, where I now am, and where Strawberry culture is still my favourite occupation. I have here a light sandy loam to the depth of 2 to 3 feet upon yellow sandy subsoil; and in spite of the extreme drought of the past summer in this country, I am happy to say that my pets thrive admirably.

In making-up the enclosed list, I have taken as a rule to give such sorts as have thus far given equal satisfaction both in light and heavy land. I wish the time had arrived when such valueless kinds as Black Prince, Keens' Seedling, Elton

Pine, and some others were no longer grown; and I firmly believe that a little good will on behalf of gardeners, and a thorough knowledge of improved kinds, will ere long bring about such desired result. It is true Keens' Seedling has some merits, but I always found it deficient in size except at the first picking, and when fully ripe it will not carry well. You will see my list is not a long one. I might have added others of great merit, but this will come by-and-by.

I wish my friend Dr. Roden, of Kidderminster, would send you a list; he is one of the most competent and independent judges, and grows Strawberries to perfection. In one of your previous articles you mentioned Filbert Pine, once a great favourite of mine, and it would still be such if I could grow it in a proper soil.—FERDINAND GLOEDE, *Eppendorf, Hamburg.*

EARLY KINDS.

No. 1 should be Early Prolific (Dr. Roden), unequalled as a first early sort in every respect.

Eclipse (Reeve).

Vicomtesse Héricart de Thury, synonym of Prince Imperial, and Marquise de Latour Maubourg.

Gweniver (Mrs. Clements, the late wife of the Rev. Dalston Clements).

Sir Joseph Paxton (Bradley).—This ought to be at the head if a little earlier; it is, however, quite a gem, and its raiser ought to have a national reward.

MIDDLE SEASON.

Lucas (De Jonghe).

La Constante (ditto).

Carolina Superba (Kitley).

James Veitch (Gloede).

Her Majesty (Mrs. Clements).

Empress Eugénie (Knevet), sometimes misnamed Black Bess.

Sir Harry (Underhill), as an annual, a highly improved Keens' Seedling.

Sir Charles Napier (Smith).

Souvenir de Kieff (De Jonghe).

British Queen (Myatt), or in its place La Châlonnaise or Mr. Radclyffe, which are of the same type.

For a variety of colour, Bicton White Pine and La Reine, both pinkish white.

LATE KINDS.

Belle de Paris, very large and late. A noble berry, though a little soft.

Cockscomb (Royal Gardens).

Dr. Hogg, when well grown a grand Strawberry.

Frogmore Late Pine, ditto.

Aromatic, new fruit like Filbert, but plant healthier.

Rifeman (Royal Gardens), this I should at any rate prefer to Eleanor, which is handsome but sour.

If quality is no objection I should grow Salter's Jucunda instead of Eleanor, which is quite as late, of the noblest appearance, and very large.

My garden soil is light, and my selection gives those sorts that like a light dry soil. Prince of Wales (Ingram), and La Constante have spread from this place into all the large gardens around me, succeed well in different soils, and are highly valued. I do not care for Lucas; unless it do better than it has done for the last three years, the next season will be its last here. Sir Joseph Paxton is large and fine, flavour excellent; it has a large core, which is drawn out with difficulty, to the injury of the fruit at times. I consider President the best of the three. But for crop, flavour, hardiness, and continuance in fruiting I decidedly prefer Prince of Wales (Ingram); it gives an excellent crop from runners, and not one runner will fail to fruit well. It is not oversweet and cloying, but sprightly, fresh, juicy, with a pleasant Pine flavour—just the thing for a hot summer's day; colour of flesh, bright red—just the thing for preserving. I have taken friends around the garden tasting my various sorts, and the vote has been given to Prince of Wales as the best more than once. Mr. Dean, of the Bradford Nurseries, Shipley, who was frequently engaged as a judge in various shows, used every year to come here and taste the various sorts, as every year I had, and have, some new kinds on trial. On his last visit he said, "If I had your garden I should grow Prince of Wales, Dr. Hogg, and La Constante, and throw all the rest away." I fully agree with this choice of three, but then they require special cultivation, particularly the second and third, and it is only here and there that they get it; hence the cry of failure of Dr. Hogg, &c. I find no failure, and gardeners do not like La Constante because it does not grow great large leaves and look well; yet it is the best Strawberry in cultivation taken in all its points—hardy as possible, never fails to fruit; flowers on very short footstalks,

always hidden by the leaves, and so always escapes being killed by spring frosts; fruits in the centre of the plant, hidden from birds, protected from wet, never splashed with soil. Fruit a beautiful colour, most regular in shape, delicious and distinct flavour, comes to table bright and good after forty-eight hours of drenching rain. Plant a moderate but continuous bearer. Being dwarf, it may be planted nearer than others, so 20 yards of *La Constante* will give a weight of fruit equal to the same extent of other sorts. What other variety will come up to this description of *La Constante*? It is said to make runners sparingly. I only know my gardener gave Mr. Dean eight hundred runners of it in one season, besides supplying my own wants.

Have you grown *Crimson Queen*? It is a petted sort, when you can coax it to do well. It gives the most magnificent crop of fruit I ever saw. The richest-flavoured Strawberry I have ever tasted.

List of twelve Strawberries—

- | | |
|-----------------------------|-------------------------|
| 1. Keens' Seedling | 7. Mr. Radclyffe |
| 2. Sir Joseph Paxton | 8. British Queen |
| 3. President | 9. <i>Crimson Queen</i> |
| 4. Prince of Wales (Ingram) | 10. <i>La Constante</i> |
| 5. Lucas | 11. Eleanor |
| 6. Dr. Hogg | 12. Elton Pine |

Best six for amateurs for succession—

- | | |
|-----------------------------|------------------------|
| 1. Sir Joseph Paxton | 4. Dr. Hogg |
| 2. President | 5. <i>La Constante</i> |
| 3. Prince of Wales (Ingram) | 6. Elton Pine |

The most prolific market garden Strawberry I know is Waite's Seedling, much grown in Lancashire for this purpose. Wonderful is nowhere beside it. Filbert Pine and Rivers's Eliza do admirably in clay soils, worthless here. *Carolina Superba* is valuable in a soil of hazel yellow loam and red sand, where the sand abounds.

Best three for general purposes—1, Sir Joseph Paxton; 2, President; 3, Dr. Hogg.

My own selection for myself would be—if only three, Prince of Wales, *La Constante*, Dr. Hogg. If six, add Sir Joseph Paxton, British Queen, Elton Pine. I like Sir Joseph because of its earliness; I omit President, because I like Prince of Wales better.—C. MARSDEN, *Vicarage, Gargrave*.

ROYAL HORTICULTURAL SOCIETY.

DECEMBER 4TH.

This was the concluding meeting of the year, but instead of being in "gloomy December," from the brightness and freshness of the flowers and their number, one could readily have supposed that it was May. The magnificent group of Orchids from Messrs. Veitch, along with the gorgeous *Poinsettias* from the same firm, at once rivetted the attention of everyone entering the room, and facing these on the opposite side was another very fine group of plants from Mr. Bull.

Class 1 was for twelve Tree Carnations. Of these, Mr. Turner, of Slough, exhibited a splendid collection both as regards growth and colour, taking the first prize. The varieties were *Avalanche*, *Blanche*, *Purity*, *Empress of Germany*, and *Vestal*, white; *Rosy Morn*, *Alice*, *Princess Christian*, and *King of the Belgians*, rose; *Valiant*, *crimson scarlet*; *Attila*, *scarlet-flaked*; and *Minerva* with *rose-picotée* markings. Mr. W. Lee, Cross-bush, *Arundel*, was second; and Messrs. E. G. Henderson, Wellington Nursery, third, with good groups. There was no exhibition in the amateurs' class for six.

For twenty-four Japanese and late-flowering *Chrysanthemums*, Mr. E. Rowe, gardener to Mrs. Lewis, The Rookery, Roehampton, was first with Japanese varieties *Madame Chinard*, *Dr. Masters*, and *Grandiflora*; and of others, *John Salter*, Miss Mary Morgan, *Princess of Teck*, *Lady Slade*, *Empress (Anemone)*, *Rev. J. Dix*, &c., all of which were very fine. Second came Mr. Douglas with beautiful examples of *Grandiflora*, *Dr. Masters*, and *Magnum Bonum*, Japanese; and of large-flowering kinds *Princess Teck*, *Pink Perfection*, and *Rev. J. Dix*. Mr. Kemp, gardener to D. B. Chapman, Esq., Roehampton, was third. Mr. Hennell, gardener to F. A. Davis, Esq., Surbiton; Mr. Walker, nurseryman, Thame; Mr. Goddard, gardener to H. Little, Esq., Twickenham; and Mr. Clarke, Roehampton, also exhibited.

The only collection of hardy evergreens bearing fruit came from Mr. George, gardener to Miss Nicholson, Putney Heath. It contained well-fruited plants of *Pernettya mucronata*, *P. speciosa*, and *P. angustifolia*, *Skimmia japonica*, and *S. oblata*.

No collection of *Hollies* was exhibited except that from Messrs. Veitch, which was shown not for competition. This was, however, one of the finest collections we have ever seen, beautiful in shape as well as in colours.—Waterer's *Golden*, Perry's *New*

Weeping, finely berried; *Small Silver Queen*, *Silver Queen*, both very handsome; *Gold Queen*, very fine; *Weeping Green* with semi-pendulous branches, finely berried; *Silver Hedgehog*, *Golden Milkmaid*, and *Gold* with dark shoots, both very effective by their golden variegation; *Ilex tortuosa* with contorted leaves, *I. ovata*, and *I. Sheppherdi* were also very handsome. An extra prize was awarded.

For nine hardy evergreens of the Yew or Cypress tribe there was likewise no competition, but Messrs. Standish & Co., of Ascot, sent a collection in which there were fine specimens of *Libocedrus decurrens*, *Cupressus Lawsoniana stricta*, *Taxus adpressa stricta*, *Retinosporas*, and *Cephalotaxus Fortunei robusta*. An extra prize was awarded.

The only collection of Herbaceous plants suitable for out-door winter decoration came from Messrs. E. G. Henderson & Son. This was arranged with great taste, and comprised numerous interesting and very ornamental plants, especially some charming little *Sempervivums* and *Saxifrages*, *Helleborus niger autumnalis flore-maximo* with very large flowers; *Perula gigantea*, a *Fennel-like* plant; *Daisies*, *Centaureas*, &c. A first prize was awarded.

Prizes were offered for pans of the pretty white Roman *Hyanth* (*Bellevalia*). Mr. Farrow, gardener to G. Batters, Esq., Brigadier House, Enfield, sent three excellent pans, and took the first prize. Mr. Rowe was second, but the plants were not sufficiently forward.

The best collection of *Endive* and other *Salading* was exhibited by Mr. W. G. Pragnell, gardener to G. D. Digby, Esq., Castle Gardens, Sherborne, who had *White and Green Curled Endive*, *French Moss Curled*, *Williams's Gloria Mundi*, *Digwell Prize*, *Staghorn*, *Green and White Batavian*, and *Fraser's Broad-leaved*; *Cabbage* and *Cos Lettuce*; *Mustard*, *Cress*, *Radishes*, *Chicory*, *Chervil*, *Celery*, *Cucumbers*, *Water Cress*, *Beet*, and *Tarragon*. Mr. J. Hepper, The Elms, Acton, was second, Mr. W. Earley, Valentines, Essex, third.

Prizes were offered by the Messrs. Carter for collections of twelve varieties of vegetables, to include *Parsnips*, *Leeks*, *Salads*, *Scorzonera*, *Carter's Perfection of Beets*, and *Carter's Dwarf Crimson Celery*. Here again Mr. Pragnell was first with an excellent collection, in which, besides the stipulated subjects, were *Paterson's Victoria Potatoes*, fine *White Spanish Onions*, large *Brussels Sprouts*, *Walcheren Cauliflowers*, and *James's Intermediate Carrots*. Mr. Osman, South Metropolitan Schools, Sutton, was second, and Mr. Earley third.

FRUIT COMMITTEE.—G. F. Wilson, Esq., F.R.S., in the chair. M. A. de Biseau d'Hauteville, Secretary of the Society of Agriculture and Horticulture at Binche, sent some seedling Pears. Of the first of these, named *Joséphine de Binche*, there were two sets of specimens, one of fruit taken from the parent tree, the other of that from a scion of the original grafted on a Pear stock. The former was the smaller in size, but superior to the latter in flavour. The Pear was highly commended by the Committee, but they did not feel themselves justified in awarding it a certificate, as it had not been grown at home. The second Pear was from a seedling of *Bergamotte d'Esperen*, of which two specimens were shown, as in the former case. As before, the fruit from the parent tree was the superior, but it was not so good as to obtain special commendation. The third Pear, a seedling from *Belle Fleurissienne*, and in shape somewhat like *Beurré de Rance*, passed unremarked, as did the fourth, which was a seedling from *Nouvelle Fulvie*.

Mr. James Lacey, gardener to James Dixon, Esq., Gothenburg, Sweden, sent the following varieties of Pears:—*Joséphine de Malines*, *Duchesse d'Angoulême*, *Huyshe's Bergamotte*, *Huyshe's Victoria*, *Beurré Diel*, *Beurré Bachelier*, *Winter Nelis*; and the following varieties of Apples:—*Court-Pendu-Plat*, *Calville Blanche*, *Golden Reinette*, *Reinette de Granville*, *Margil*, *Golden Pippin*, *Old Nonpareil*, *Reinette de Caux*, *King of the Pippins*, *Mannington's Permain*, *Van Mons Reinette*. They had all been grown under glass, were of splendid size and beautifully coloured, but for the most part were lacking in flavour. The Committee granted a cultural commendation for the Apples and another for the Pears. Mr. Bye, Hampton Court, Leominster, sent a small seedling Apple. A seedling Melon, called *Raby Hybrid*, was submitted by Mr. Wescott, of Raby Castle Gardens. Mr. Sage, of the Gardens, Ashridge, sent a quantity of Tomatoes, which were admired for their fine condition.

Mr. James Taylor, gardener to Mr. R. H. Powell, Maesgwynne, sent a Turnip which he called *Cream of the Earlies*. It was, however, identified as being the *Green-Top Stone*. Mr. Richard Dean, Ealing, sent a specimen of the *Californian Radish*. Two specimens of the *Ulm Savoy* were shown by Mr. Horley. Mr. Thomas Jones, of the Royal Gardens, Frogmore, exhibited a dish of forced *Asparagus*. He also sent four *Pine Apples*, for which he was awarded a cultural commendation. Messrs. Veitch & Sons showed fifteen varieties of *Celery*.

FLORAL COMMITTEE.—W. Marshall, Esq., in the chair. Messrs. Veitch's splendid group, which has been already alluded to,

received a cultural commendation. It contained *Cattleya exoniensis* and *Dominiana*, the first a magnificent variety of this fine hybrid; a fine pan of *Oncidium cheiroporum*, with numerous trusses of its pale yellow sweet-scented flowers; the rare *Pleione Reichenbachiana*, with two flowers on a spike; *Calanthe Veitchii* and *C. vestita*, most useful winter-blooming plants. Messrs. Veitch also sent *Aphelandra nitens* with handsome, glossy, deep green foliage, and rich orange-crimson flowers; it received a first-class certificate. The same award was made to them for *Poinsettia pulcherrima* major, of which the purplish crimson bracts are more numerous than in the old form, and it is doubtless an improvement upon it. Mr. W. Bull also exhibited a fine group, which had likewise a cultural commendation. In it were *Godwinia gigas*, with a single dull purple-coloured spathe, the stalk singularly barred and mottled; *Demonorops palembensis*, a handsome table Palm. Also the following, which had first-class certificates—*Croton spirale*, the leaves yellow, crimson, and purple, singularly twisted; *C. majesticum*, a very handsome species with leaves 15 inches long, mottled and veined with crimson and yellow; and *Zygopetalum cerinum*, a handsome species, in which the sepals and petals are greenish white, the lip yellow, the throat barred with maroon.

Mr. Clarke, market gardener, Twickenham, sent a fine collection of *Cyclamens*, which were awarded a cultural commendation. From Messrs. E. G. Henderson came double forms of the same flower, of different colours; not so attractive as the single form, though now that the break has begun no one can predict what a feature they may ultimately become. Mr. A. Forsyth, nurseryman, Stoke Newington, sent *Chrysanthemum* Mrs. Forsyth, a seedling from Christine, with globular white flowers, much larger than those of its parent. Mr. George, gardener to Miss Nicholson, contributed a very pretty collection of cut flowers. From Mr. Turner, Slough, came a fine collection of dwarf standard green-leaved *Aucubas*, bearing a profusion of berries, together with *A. Standishii*, with a large head and very showy oblong berries.

A cultural commendation was awarded to Mr. J. Jaques, gardener to P. Cunliffe, Esq., Hooley House, Coulesdon, for *Calanthe Veitchii*, with two spikes, having two dozen to thirty flowers each, and most lovely in colour. Mr. Croucher, gardener to J. Peacock, Esq., Sudbury House, Hammersmith, had a first-class certificate for *Agave Corderoyi*, with light green leaves set with purple spines. Mr. Green, gardener to W. Wilson Saunders, Esq., Hillfield, Reigate, received a second-class certificate for *Coliopsis hyacinthosma* with waxwork-like white flowers. Messrs. Perkins, nurserymen, Coventry, sent *Selaginella albo-lineata*, which has been exhibited before.

COLLETIA BICTONENSIS, C. HORRIDA, AND OTHER AUTUMN-FLOWERING SHRUBS.

I AM glad that notice is being taken of this very curious plant, and I can endorse all that has been said about it, excepting its origin, which in some way seems to have been connected with Bicton, but I believe its usual trade name now is *C. cruciata*. The plant altogether differs so widely from anything else that I am acquainted with, that there appears to be little doubt of its being a distinct species.

Many years ago I had a plant from Messrs. Osborn, of Fulham, a firm famous for hardy shrubs and trees of all kinds. This was named *C. bictonensis*. It withstood the winter of 1860-61 in a fully-exposed place, but succumbed to that of 1866-67, having flowered more than once between these severe winters. Another plant was procured and planted in the same place, and this is now a sturdy formidable shrub upwards of 7 feet high, and the top covered with flowers, which are at least ten times as numerous as the tiny lanceolate leaves, which an ordinary looker-on might easily fail to see. I do not think it has ever flowered so abundantly as during this season, but it has bloomed on several occasions before.

Respecting its suitability for a hedge plant, I fear it does not in all cases grow fast enough; but it is one of the most difficult plants I know to approach, except some of the Cacti, and these, as is well known, will not survive out of doors. Excepting in 1866-67, I have not seen this plant in the least affected by the cold.

C. horrida is also a formidable plant, which I do not remember having seen flower; it is, however, not so remarkable as *C. cruciata*.

The present autumn seems to be favourable to the blooming of shrubs, for I see *Aralia spinosa* has bloomed also. Might I ask if *A. japonica* and *A. spinosa* are alike? The difference with me is so small that I fail to perceive it, both being deciduous, with sub-pinnated leaves, the central stalk or midrib of which exceeds 5 feet in length—the largest deciduous leaf I know. A large cluster, or rather umbel, of flowers often ap-

pears at the top of the shoots in fine autumn, and such were produced this year. The pretty evergreen species *A. Sieboldii*, which has stood out here two winters in a very exposed place without any protection, is also flowering this season. I hope to hear of this shrub being more plentiful, its deep shining green leaves give it a striking appearance. Amongst other autumn-flowering, or partly-flowering, shrubs I find the spikes of *Andromeda formosa* are not so forward this season as they have been sometimes; and the same may be said of the Cornish Heath and others of its class.

Referring again to hedge plants, might I ask if anyone has tried *Maclura aurantiaca* (the Osage Orange) for this purpose? Many years ago Mr. Ridgway, of Fairlawn, in this county, had some hedges of it, and it was at the time strongly recommended as a hedge plant, not merely as forming ornamental hedges, which, by-the-by, it has little claim to do, but formidable fences, for which its sharp thorns fit it well. The plants which I had of it did not seem to ripen the whole of their shoots, thus showing it wanted a hotter summer. A gentleman visiting here from Canada some years ago, said it made good hedges there, where the severity of the winter was even too much for our Whitethorn; but as a single plant it is rambling and unsightly, and in point of interest, if not also in utility, it falls far short of the two *Colletias*.—J. ROBSON.

A NOTICE of *Colletia bictonensis* at page 406 will have reminded the readers of THE JOURNAL OF HORTICULTURE of the not less curious and interesting *C. horrida*, a specimen of which has been growing here for upwards of ten years, a period sufficiently long in connection with attendant circumstances to judge of its merits as a garden plant. It is now about 4 feet high, with a somewhat irregular head of dense clusters or tufts of sharp spines, and anyone, unless covered with a coat of mail or some other impervious protection, would hesitate a long time before attempting to make his way through a thicket composed of this shrub. At bottom the spines have dropped, leaving almost bare the main stem, which is not much unlike that of the common Furze of the same age and size, and branched. The plant is sheltered from the north and east by the house. The earliest growth of the season has generally stood well during the following winter, but the later shoots have been invariably injured more or less by frost, and in severe weather killed entirely.

The suitability of *C. horrida* for forming a hedge, as the Editors justly observe of *C. bictonensis*, is more than doubtful from several causes—its irregular habit, which might, however, to some extent, be regulated by pruning; but the uncertainty attending its capability to withstand the severity of some of our winters, unless in a very sheltered situation, more than counteracts the advantages (if any) of the formidable barrier a hedge formed of this plant would offer to incursions; and even if a row or hedge of it were planted in a favoured situation, the effect of severe weather would render it unsightly for several months. The dropping of the spines at the bottom would make it utterly fail to keep out small animals, as rabbits, against which an effectual permanent barrier is often a desideratum. As a single specimen it should be retained in the garden and shrubbery as a curiosity of vegetation, for the contrast which its peculiar colour would give, and for the botanical interest attached to it.—A. H. KENT.

EXHIBITING FRUIT NOT GROWN BY THE EXHIBITOR.

Was it lawful for exhibitors to purchase fruit for competition at the late International Fruit Show held at Kensington? I intended to exhibit, but declined doing so, owing to a gentleman, a stranger to me, who declined giving his name, coming to my nursery and inquiring for large Pears. He was searching this island over for large fruit, and he told me they were intended for the International Fruit Show. As this was being done, I decided not to show, and sold him my Pears at very high prices. Will you say if fruit thus obtained is eligible for competition?—CHARLES SMITH, *Caledonia Nursery, Guernsey*.

[In horticultural exhibitions, when no conditions are published, it is always understood and expected that the subjects exhibited are grown by and are the property of the exhibitors. In exhibitions where there are what are called "open" classes, in which fruiterers and dealers in fruit may compete, it cannot be expected that the fruit they exhibit should be of their own production. As there were no "open" classes mentioned

in the schedule of the late Exhibition at South Kensington, it was presumed that the fruit exhibited was the production of the exhibitor.—Eds.]

STRAW MATS FOR COVERING FRAMES.

In answer to one of your correspondents, I have been accustomed to make several of these for the last three years, and I will state the method I adopt as briefly as possible.

In the first place I procure a stool or trussel about 3 feet high, and as long as the mat to be made; I next procure some good wheat straw in the front of this stool, and then I and my man stand behind the stool, each with a bunch of string cut into convenient lengths. I have a boy to draw a small handful of straw and supply me and my man alternately; we then tie it at four different places at equal distances apart, but not cutting the string. This done, I take another handful of straw, tie it with the other, and so on, until the mat is made. When one string is used I take another from the bunch from my shoulder. It may be as well to state that a notch should be made in the stool, and every time a tie is made I place the string in this notch, which enables the workman to keep regular with the tying from top to bottom. I find that these mats with a little care last from two to three winters. Care should be taken to have them thoroughly dry before they are rolled up in fine weather.—H. MOORE, *Old Windsor*.

In answer to "R.," I will describe the way I make them. Procure some rods as straight as you can—a stout beanstick would do if nothing else were at hand. Make the length you require your mat, then make fast some large common tar twine 6 inches apart the whole length of your rod; next lay the rod on the potting-bench, and then drive some nails the same distance apart the farther side of the bench, and strain the strings to them. With some small farred twine make fast to the rod at the same places as the others. We are now ready for laying on the straw; some wheat sheaves with the ears cut off are the best. Now draw a dozen straws or so from the sheaf, and lay alongside the rod on the large strings, and then with the smaller pass over the straw, draw underneath the large ones, and draw up tightly; your straw is then fixed between the two strings. Go along the length of the rod, and commence again, and so continue till you get to the nails, and then, if not wide enough, let loose the strings and strain as before till you have the desired width. Fasten another rod on the ends of the string, and then you have a neat mat to roll up and carry about at will. Mats may be made without rods, but I prefer those with rods. I first saw them made at Mr. Ivery's, at Dorking. They are there made by simply drawing the straw from the truss and raking it smooth with the head of an old iron rake as it is drawn.—C. H. TALBOT, *Gardener, Spring House, Midhurst*.

GLADIOLUS CULTURE.

ALONG with the many lovers of the Gladiolus, I have taken a deep interest in the recent correspondence on the above subject in this Journal. Some of your readers may have had longer experience, but I very much question whether any of them have a warmer attachment for, or take a greater interest in the cultivation of that noble flower than your present correspondent. Unfortunately in its cultivation, before the end of all our care can be attained, there are many and mysterious difficulties to contend with; our best-laid plans are frequently thwarted, and where only health and hearty are expected, and certainly deserved, it far too often happens that a few sickly-looking leaves and a poor, shrunk, undesirable bulb are all that is left to recoup—sinking the labour—a very considerable expense.

My stock this season consisted of seven hundred bulbs, and I certainly never grew them previously with corresponding satisfaction, or took so many or such valuable prizes; but fortune with good named varieties having well-nigh driven me to despair, I this season relied principally on the seedling bulbs brought out by Mr. Cannell, of the Woolwich Nurseries, and which, I suppose, are raised by E. Banks, Esq. When I got them they were to some extent spotted, but after taking the greatest part of them up I have not yet seen one spotted bulb amongst them, and was about to remark, neither have I amongst the named varieties; but I find on a further inspection that some of the latter are spotted, but up to the present time there is not one such as far as I see amongst the seedlings, which are sound and plump, in fact the best I ever harvested.

I have entirely discarded potting, but when this system is resorted to the pot ought never to be less than 6-inch, and then, never minding the height of the spike, the plant ought

to be planted out before the roots touch the sides, as without question it is better not to deter their spreading. I once recommended the mixing of silver sand with broken charcoal to surround the bulb, which answered well, but now I use nothing but common river-side sand for the purpose, and am not certain that it is of any material advantage. Independent of known diseases, unquestionably bulbs degenerate, and without their being spotted, the spike keeps getting unmistakably less. This is the most disheartening circumstance that attends them, and, consequently, that to which we ought to devote all our efforts. I have been able to turn brown foliage green, but not to grow the spikes so well after the first year of their being imported. I have many times this season wondered, and occasionally, without getting an answer, asked the question, "Do the French cut their spikes?" Next year for my own satisfaction, and as I never cared to keep secrets, and for any other lover of the Gladiolus, I intend to plant side by side the bulbs from cut and uncut spikes.

I believe our frequent cutting is one great cause of degeneration. I once thought that "inferior bulbs after being killed" were mixed and sent out, but I am now, after greater experience, rather more dubious about that opinion. I believe that fresh soil from the turf heap is more suited to their nature. When they turn brown it will be found that they have few if any healthy rootlets. By pulling them through your fingers the skin by disease slips off as it does off a mouse's tail. This is the most important disease I have hitherto had to contend with, and the best remedy for which—and several times the effect has been most magical—is, as I have before advised, a strong mixture of nitrate of soda. I dug some into the soil last autumn, and some I used in water, but I am strongly convinced that I have frequently used too little, "never too much."

A proper box to grow them in is also a matter of great importance. My own contrivance is simple, I do not think there is any better; and if "D." of Deal, Mr. Banks, or you, Messrs. Editors, will accept of one as a present, I shall only be too happy to send it, including glass prepared for the purpose. Of the same seedlings I am anxiously expecting a letter to say that I am thus next year to have one thousand, and I strongly impress upon all to get a few 'imported' bulbs of the best grown, and then back-up with English-raised seedlings. My own—that is, those spoken of, in many instances have been superb, one pure white especially, or with only a very thin streak of scarlet around the throat. I appeal to all who saw it in the winning stand at the Hetton Horticultural Show if it was not the best white bloom they ever saw; in fact, the three first stands were decidedly the best set I have seen this season. My stand at Bishop Auckland second to the Rev. Lord Hawke was very second-rate, as were all the rest, save those of his lordship. The bottom bloom of the seedling measured 5½ inches in diameter as it hung on the spike, and unfortunately it was exhibited under a great disadvantage, as the second bloom through my own carelessness never opened. I sometimes practise wrapping a piece of bass around the bottom blooms to keep them back, and in this instance it had got slipped back and hid from view, and before detected the bloom had spent its strength and never opened. Should any other grower of Mr. Banks's seedlings, or that gentleman have one similar, I should be glad if they would give the name I have thought about, or at any rate let us give to one variety one name.

This season I grew my Gladioli where I had previously grown Dahlias, on ground the fourth season after being broken-up, and gave no manure, but I believe cow manure is the best. I should like to have had a word or two more on the same subject, had I not been held back by a pledge, but next year, possibly "D., Deal," or Mr. Banks will devote one corner to a plan they will otherwise hear of.—J. WITHERSPOON, *Chester-le-Street, Durham*.

HISTORY OF COVENT GARDEN MARKET.

No. 2.

THE disgraceful nuisances and the mere sheds and stalls occupied by the retailers continued during the first quarter of the present century. But during that period the great increase of the metropolitan population and wealth not only made the complaints of both vendors and purchasers more commanding attention, but the managers of the Bedford estate saw that its interests urged improvement.

Although fruits and vegetables were sold in the Borough, Farringdon, Portman, and Spitalfields markets, yet more were

sold in Covent Garden, or "The Garden," as costermongers term it, than in all the others united; and it was known that there was a growing inclination among the higher classes personally to make purchases, and if that taste was fostered by making the market more attractive, the tenants would be empowered to pay higher rents, for more and wealthier purchasers would be tempted thither. The improved shops and colonnades were consequently erected, and now in the centre row alone five florists, one fruiterer and florist, two seedsmen, and fourteen fruiterers have shops, and each of the twenty-two pay an average rental of £100 annually. There are forty-seven fruit and vegetable salesmen in the fruit and long markets, and nine Potato salesmen in the south row, and a far larger number of vendors of fruits and vegetables in the shops and stalls under and about the exterior colonnades.

Before incurring the large expenditure needful for constructing market worthy of the metropolis, the Duke of Bedford wisely had it determined whether he could increase the tolls. By the grant of Charles II. the Earl of Bedford was empowered to hold a market in Covent Garden, and to receive the accustomed dues and tolls to such market belonging, but not specifying the tolls the opinion was that no tolls could be recovered at common law. This opinion was sustained, but under a subsequent Act of Parliament giving the owner of the market power "to take all such tolls as were usually taken or collected, or which were payable within the market," the Court of Common Pleas decided that the Duke was entitled to recover such tolls as were usually paid in any part of the market, although they varied on the same articles in different parts of the market (*Bedford (Duke) v. Emmett*, 3 B. & A. 366). Thus assured of remuneration, the Duke proceeded in the work of reformation.

The market occupies rather less than two acres, its length from west to east being 326 feet, and its breadth from north to south 248 feet.

In 1827, a plan was submitted to the Duke of Bedford by Mr. Fowler, and exhibited at Somerset House in the same year. A model was soon afterwards formed from this plan, and exhibited to all those interested in the market. The ground plan of this design, which was engraved in 1827, exhibits three parallel buildings, each surrounded by an open colonnade. Exterior to the buildings is a space sufficiently wide to allow a row of carts and waggons to arrange themselves side by side, the horses' heads pointing from the building, without interrupting carriages passing along the street. The chief objection to this plan was the occupation of so much space by the colonnades. In other respects it does not differ essentially from that executed.

In 1827, the Duke of Bedford having procured an act of parliament for the rebuilding of the market, employed Mr. Fowler as its architect; and, by the suggestions of Mr. Charlwood, who was employed to arrange the ground plan, distribution, and appropriation of the different departments of the market, the plan of Mr. Fowler was altered till it assumed the form of that about to be described.

Approaching from the east, the chief feature is the quadruple colonnade with the conservatories over. In the central building is a passage 16 feet wide (*t t u*), open to the roof, and on each side a range of fruit shops, forced articles, and the more choice culinary vegetables and herbs. Each shop has a cellar under, and a room over it, with a trap-door to the former, and a small staircase to the latter. There are two exterior colonnades on the north and south sides (*p a c c*), which serve as passages in front of the shops: the shops on the north side are for different descriptions of culinary vegetables and the commoner fruits, and those on the south side are exclusively for Potatoes and the commoner roots. The half of one of the areas (*p d*) is covered with a roof in three parts, open at the sides for ventilation and light; the roof is supported by cast-iron pillars, from which spring circular ribs, instead of horizontal tie-beams; and the result is a very light appearance. Under it is held the wholesale fruit market, and below the surface are fruit cellars. The open space (*r f p*) under the quadruple colonnade is occupied at one end as a fruit market, and at the other with stands for fruits and vegetables.

The ascent to the conservatories over this open colonnade is by four staircases, two from the central passage (*u t t*), and one from the end (*e q*) of each of the exterior colonnades. The framework of the conservatories is wholly of cast iron and copper, even to the shelves of the stage. The conservatories are 15 feet broad, and 15 feet high; they do not occupy more than a third of the area of the terrace, and the remaining part

serves as a promenade, and for the display of hardy plants in pots and vases, and other garden ornaments. In the centre of the terrace is a handsome fountain designed by Mr. Fowler, of Devonshire marble, highly polished. The water is supplied from a cistern, or rather a series of connected cisterns, placed immediately under the roof of the grand central passage.

There are cellars below all the fruit markets, under all the buildings and pathways, and continued through one side of the long market (*z z*) for storing-up Potatoes. There are rooms over all the shops, used partly as store-places and partly as bedrooms.

Both the open and covered markets are inaccessible by carts and waggons. There are circular openings or manholes, 2 feet in diameter, in the floor of the long market (*z z*), which communicate with the cellars, and through which the Potatoes are shot down; and there are openings by trap-doors to the cellars of the fruit market for similar purposes. The openings by which the Potatoes are brought up from the cellars are within the buildings. There are also cellars for washing the Potatoes, and water is laid on for this purpose, as well as for general uses, throughout the whole of the buildings. The supply is obtained from an Artesian well, sunk beneath the central path to the depth of 280 feet, which affords 1600 gallons per hour, a quantity greatly exceeding any occasion that can be expected to arise. A small steam engine has been erected to distribute the water over the higher parts of the buildings, and the whole area of the markets, and more especially to supply the handsome fountain before mentioned on the terrace in front of the conservatories. The central passage (*u t t*), the exterior colonnades, and every other exterior part, independently of the interior of the shops, are lighted by gas.

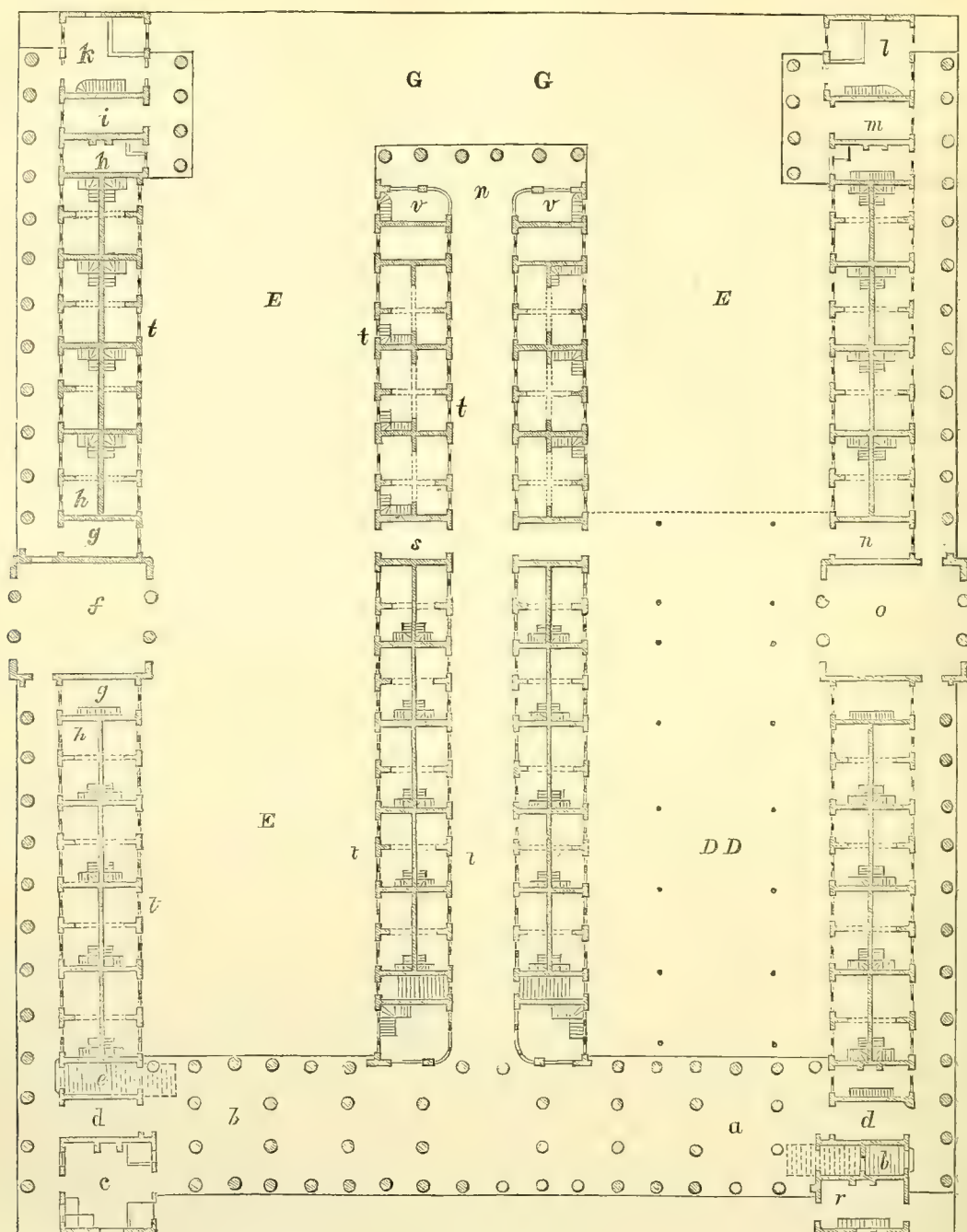
The interior walls of the shops, cellars, &c., are of brick, faced in conspicuous situations with Yorkshire freestone. The columns are of Scotch and Devonshire granite, the shafts being of one stone each. The paving of the passages is partly of granite and partly of Yorkshire stone. The open and covered markets (*z* and *p d*) are causewayed with granite, in the manner of the best street paving. The terrace over the quadruple colonnade is composed of large slabs of stone, which form at once the floor of the terrace and the ceiling of the colonnade. From the terrace the water is drained into hollow cast-iron beams, on which the stones rest. These are supported by columns, some of which, in the centre compartment, indicated between *p* and *r*, are of cast iron, for the purpose of obtaining more light and space directly in front of the central passage. The exterior passages, including the shops, are covered with slate and zinc.

The conservatories are heated by hot water or by steam, at pleasure, according to a plan devised and executed under the direction of Mr. Collins.

The buildings were completed in 1830, after an expenditure of £42,000, and now on every fine day of the year the market is much frequented. As early as two o'clock in the morning waggons high-loaded with regularly-packed Cabbages may be seen moving slowly along Piccadilly and other approaches to the market; others with Turnips, all with their white globes outwards; and spring vans with sieves of fruits. From that hour until nine, especially if it be the morning of a Saturday, the market is thronged and animated, but necessarily orderly. The most delicate fruits—Peaches, Raspberries, Strawberries, &c., are deposited in the Central Avenue. On the north of that avenue, under a covered space, Apples, Pears, Plums, and other hardy fruits that are in season are for wholesale. The open space to the south is for vegetables, and without-side them is occupied by the Potato-salesmen. The fruit sales are of the produce of England, France, Holland, Belgium, Spain, Portugal, and Algiers. If the sale exceeds the supply, the electric telegraph and steamers secure a larger import within forty-six hours from Holland, Belgium, or France.

In one night the South-Eastern Railway has borne to London 100 tons of Green Peas, 25 tons of Plums, and 16 tons of Black Currants from France; 50 tons of fruit, and 10 tons of Filberts from Kent. The Brighton and South-coast Railway has brought in one year 300 tons of fruit from Jersey and Dieppe. In 1853 the Great Northern brought hither nearly 46,000 tons of Potatoes, and 1940 tons of other vegetables. Walnuts are brought from Antwerp, and the steamers have on board sometimes between 400 and 500 tons. The writer from whom I derive these items saw 613 bushel baskets of Strawberries and 1000 baskets of Greengages that had arrived from Honfleur during the week.

In the season one salesman employs four hundred women



- a, Quadruple colonnade, over which is a conservatory.
 b, Quadruple colonnade, over which is a conservatory.
 c, Public house.
 d, Passage.
 e, South stair to the conservatory.
 f, Open casual Potato market, or space which may be appropriated to general purposes.
 g, Passage.
 h, Two public houses.
 i, Passage.
 j, Seed and herb shop.
 k, Seed and herb shop.
 l, Seed and herb shop.
 m, n, Passages.
 o, Open casual fruit market, or space which may be generally appropriated.
 p, Passage.
 q, North stair to the conservatories.
 r, Wholesale fruit and Potato warehouse.
 s, Passages.
 t, Shops and dwellings over.

u, Portico, with terrace over it, for hardy plants.
 v, Shops, with rooms over for eating fruits and ices, communicating with terrace over the portico.

- A, Area, 12 feet deep and 9 feet wide, apportioned in spaces for casualty stands—that is, stands for any grower or dealer, not a regular tenant, who chooses to send articles to market.
 B, Cart or waggon stands, 12 feet deep and 9 feet wide; taken by the market gardeners or garden farmers by the year.
 C, Potato stands, 10 feet wide.
 D, Fruit market. D is roofed over, the roof being supported by iron pillars joined by spandrels.
 E, Open pitching stands for vegetables and Potatoes, rented by market gardeners as yearly tenants.
 F, Covered pitching stands for fruits and vegetables.
 G, Flower-stands for plants in pots, in balls of earth, and for nosegays.

For this ground plan and details I am indebted to Mr Loudon.

shelling peas. The busiest time is about six in the morning when the costermongers congregate for a day's supply.

Rhubarb is supplied chiefly by the market gardeners around London. Mr. Myatt, about sixty-five years since, sent five bunches to market, but only three of them were sold, but now hundreds of tons are sold in Covent Garden annually.

Returns from the seven railways showed that there were brought to London in 1853, 70,000 tons of vegetables and fresh fruits. This is entirely independent of the dried fruits, Nuts, Pine Apples, Oranges, and Lemons imported.

The market prices, of course, vary with the seasons and the abundance or deficiency of the crops, but there are a few relative notes worth recording.

About the years 1825-30 Court bouquets sold for one to six guineas each, but ordinary bouquets were scarcely used except at weddings, and they were from one to three guineas each; but during the last twenty years, they having become so fashionable, a large number of persons have become growers of flowers for that particular trade, and although such an immense number of bouquets are sold, they do not fetch so high a price. Court bouquets range from one to three guineas each, ordinary wedding and ball bouquets from 10s. 6d. to two guineas. The highest price of late years that we hear of was one magnificently trimmed with lace, for which ten guineas was paid. The highest price of forced Strawberries during the same period was 10s. per ounce, and the highest price of Pine Apples 20s. per pound.

In conclusion, I must note that, why the measures of this market have names derived from the Anglo-Saxon puzzle me. Punnet is from *ponne*, a pan; sieve from *sife* or *syfe*, founded on its use for cleaning, and which the basket resembles in shape. In 1833 Mr. Bevan made a very special examination of the Covent Garden Market measures, and the following are the results of his researches:—

There are four sizes of punnets, which leaves the capacity of this measure very uncertain, unless the particular variety is indicated. From Mr. Bevan's experiments the greatest capacity of the

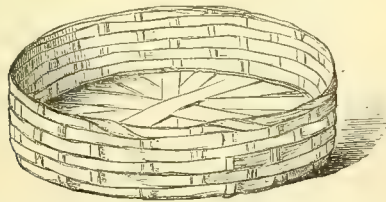
	Cubic inches.		Cubic inches.
Sieve is	1644	Largest punnet	248
Half sieve	822	Second punnet	223
Quarter sieve	362	Third punnet	90
		Least punnet	60

But as in practice they may not be filled to the maximum, it may be inferred that, relatively to a bushel, the proportion will stand as follows:—

2 sieves	1 bushel.	12 large punnets	1 bushel.
4 half sieves	1 bushel.	16 second punnets	1 bushel.
8 quarter sieves	1 bushel.	32 third punnets	1 bushel.
		48 least punnets	1 bushel.

In other words, they may be considered as follows:—

Sieve equal to	$\frac{1}{2}$ bushel.	Large punnet	$5\frac{1}{4}$ pints.
Half a sieve	1 peck.	Second punnet	1 pottle.
Quarter sieve	1 gallon.	Third punnet	1 quart.
		Least punnet	$1\frac{1}{2}$ pint.



As very few of your country readers know the form of the chip-basket called a punnet, I enclose its portrait, and make my retiring bow.—G.

MUSHROOM GROWING.

I SECURE the droppings from the only two horses we have, and thinly spread them in a shed till I have enough to make a bed. This material is then thrown up in a heap, and turned three times a-week till all the rank smell is gone; it is then taken to the Mushroom house and beaten with a mallet quite firm in the bed, after which it heats but little, but I spawn it in a day or two, and add $1\frac{1}{2}$ inch thick of loam.

The house is a lean-to, due north, about 12 feet long, with a bed on each side 3 feet wide and 1 foot deep. I have a 4-inch pipe round the house. I keep the heat as nearly as possible at 60°, and give an occasional sprinkling of water, but with all my efforts to ensure success there is generally a failure. Will you aid me?—AMATEUR.

[The subject has been frequently referred to of late, and the difficulty of giving answers often depends on a want of know-

ledge of the materials at command. Now, in your case you state the facts so clearly that we would willingly comply and give a short treatise as you request, except that we have press of matter and do not wish to be always writing on the same subject.

In the first place, your keeping the droppings of two horses thinly spread in a shed until you think you have enough for a bed is all well, though a little short litter with the droppings would be desirable, and throwing these into a heap to ferment, generally, is also well; but the turning this heap over three times a-week, until all the rank smell is gone, we consider worse than labour lost. We have long considered that such careful modes of proceeding just waste the manurial virtues of the material. As evidence of this we may state that we had something to do with the growing of Mushrooms in two large establishments, and the beds, managed much the same as yours, yielded but small returns. The manure was too wasted in the drying and knocking about. We would suggest that, after allowing your heap to ferment a little for a few days, you take it to your beds at once, never minding if it do give off a little steam.

In the next place, your beating the beds firmly is all as it ought to be; but the fact that the bed "after this process heats but little," just confirms us that your material was too dried and exhausted. That we believe was the cause of the failure in the cases referred to. We malletted and hammered hard enough to please the superintendents. A piece tried on the sly with moister and fresher materials confirmed us in this opinion. We were fully confirmed in our opinion on visiting a large market garden on the south side of the Thames. These shallow beds, about 15 inches deep, were made in sheds from dung brought from London. The most littery was removed, by shaking, for covering, &c., and the droppings and short litter were thrown into a heap for eight days or so, and whilst hot and steaming were taken to make the beds, well trampled and beaten, and in a few days holes were made some 9 inches apart; as soon as the heat began to fall to 80° the spawn was placed in the hole. If in a day or two the heat did not rise, a few droppings were placed over the holes. If there was no rise in temperature the bed was beaten all over, and then, if all was right, earthed-up, and the requisite temperature secured by a litter covering.

Be careful that even in what we suppose to be your extra-prepared material you do not spawn too soon. "Spawn it in a day or two" can rarely be relied on; but then, if you use your material less prepared, as we generally do, there is less necessity for making-up a bed at once. It is often safer and more economical to make it in layers, beating each layer. A simple fact many are slow to learn—namely, that the more solid you make such material the less will it heat violently. But another thing is to be thought about—that if no air can enter, or be enclosed, the bed will ere long cease to heat at all; and hence the importance, for a constant bed with constant heat, that it should contain a little of more open material than dried droppings.

Our shed beds are $3\frac{1}{2}$ feet wide, and average throughout from 15 to 18 inches in depth; those on the shelves not quite so much. As your beds are 3 feet in width, we would make them 15 to 18 inches in depth instead of 1 foot. It is all very well to have hot-water pipes round to keep up the temperature to about 60° (it ought never to be higher), but the greatest success will after all depend on having a long uniform temperature in the beds.

On the whole we should be inclined to think that your want of success is owing to too great preparation of the material and too early spawning.]

HINDLIP HALL,

THE RESIDENCE OF HENRY ALLSOPP, ESQ.

ABOUT three miles to the north of the city of Worcester stands in a commanding position Hindlip Hall, the residence of H. Allsopp, Esq. The present mansion is of modern erection, occupying the site or nearly so of Hindlip Castle, to which are attached some interesting historical associations, but scarcely any vestige of it remains. A portion of an old building has been converted into a cottage, in which Mr. Moffat the gardener resides, but that may have been a dwelling of a later date, as it has more the character of a timber-built dwelling of the seventeenth century than of a fortified place; and as it is very near the church, it is not unlikely to be upon the site of the former structure, for in former days a mansion or fortress frequently had a church close at hand.

Hindlip, or as it was then spelled, Hindelep, is noticed in Domesday Book, but there were then residing there only seven rustics and a priest. The manor passed to various proprietors, the Dabetots, the Solleys, and the Coningsbys, until it came to the Habingtons. Mr. John Habington, cofferer to Queen Elizabeth, is believed to have erected the mansion, a date in one of the parlours being 1572. Yet there is reason for believing that he, as certainly was his son Thomas, was a Roman Catholic. The secret recesses, concealed rooms, and private passages were so numerous, that when, after the discovery of the Gunpowder Plot, the house was searched for some of the conspirators, twelve days elapsed before they could be ferreted out. Mrs. Habington, wife of Thomas, is traditionally believed to have written the letter to her brother, Lord Montague, that led to the discovery of the plot, and it is certain that her and Lord Montague's intercession obtained a pardon for her husband, who was condemned to die for concealing the conspirators. How long Hindlip continued with the Habington family we have no information, but at the beginning of the present century it had become a ladies' boarding school, and then, or subsequently, it was the property of Mrs. Graves, and a few years afterwards it passed to the proprietorship of Henry Allsopp, Esq.

The modern mansion is seated on an eminence of sufficient height to command extensive views over the neighbouring country, without being too bleak and high, for it is well sheltered by healthy and promising timber trees judiciously planted, especially on the north and north-western sides, while to the east, south, and south-west the view is over one of the richest cultivated districts in England. Immediately in front the ground sinks gently to the south, as likewise it does to the east and south-west, while the carriage front is to the north, and is approached by a pleasant drive of upwards of a mile from the lodge. The road, for a considerable part of the way, is skirted by a belt of trees on one side, while the park extends on the other, and there are gas lamps at proper intervals along the side. The east, south, and west sides of the mansion all more or less face the pleasure ground, but the mansion does not exactly align with the cardinal points, the principal front facing the south-east. But as this is of no consequence to the general reader, I may say that the principal view takes in the tall spires of the Worcester churches and the stately cathedral, as well as a large portion of the city and its suburbs, while far beyond, rising partly in the mist, are the Malvern Hills. The district around Worcester is sufficiently diversified by gentle hill and dale to afford soft and smiling scenery, and yet meet the views of the practical farmer who likes fields neither too flat nor too hilly. The whole is sufficiently embellished by rich woods, and now and then orchards almost vieing with the woods in the magnitude of the trees. To complete the picture, the majestic Severn rolls down the valley some two or three miles to the right of Hindlip, and passes Worcester, where it forms a stream of much more importance than I expected. At a convenient distance from the mansion the railway from Birmingham to Worcester passes the pretty and interesting village of Fearnall Heath, where there is a station.

Viewed at a short distance off the mansion might easily be taken for being of Bath stone, but on closer inspection the material is found to be a light-coloured brick, but of so smooth and fine a kind, that the wonder is how it was made. It is said each brick (the ordinary size), cost upwards of 2d. The design is Grecian, as will be seen by the accompanying representation taken from a photograph by Mr. Evans, Tallow Hill, Worcester. Dressed grounds surround the house on all sides or nearly so, and there is a liberal display of shrubs and ornamental trees, but less flower garden than is often met with in places of only moderate extent, Mr. Allsopp justly regarding the present rage for floral display during the few months of the latter summer as a pursuit not worthy the attention so many expend upon it. He is an enthusiast in fruits and a larger and finer collection of these is cultivated here than in most private places, Pears especially being remarkably good. Separated from the dressed ground by belts of shrubs is the kitchen garden, lying to the westward of the mansion, and surrounded by high walls and outside slips. The ground inclines towards the south-west. The wall on the slip side at the south-west corner was quite 20 feet high, but in general about 12 feet was the greatest height inside. The north wall was all covered with glass, and there were some other glass houses in a slip at one corner. I learned from Mr. Moffat that there are nineteen houses in all, and none of

them small ones, so it will be seen that fruit-growing has a chance to be well carried out at this remarkable place. At the time of my visit (the early part of September) there was an abundance of Peaches under glass, while the Pear trees on the walls were in luxuriant health and bearing heavy crops of fruit, in some cases under a system of treatment differing from that generally given to this fruit. A few notes respecting them may, therefore, not be out of place.

Mr. Moffat, the able gardener here, is a great advocate of the orchard-house principle of growing fruits as practised by Messrs. Pearson, Rivers, and others; and in one of the houses I entered, a Peach house, about 75 feet long, a "lean-to," some thirty trees in pots occupied the front or body of the house, and I was told a good crop had been gathered from them, while against the back wall, which appeared to be quite 12 feet high, were planted about fifty Peach trees, each trained with only one stem in a diagonal direction against the wall, the inclination being something like 60° with the horizon. Contrary to the general mode of treatment adopted with the Peach tree, these were spurred-in in much the same way as common hardy fruits usually are. At the time of my visit there were some excellent fruit still remaining, and the trees were the picture of good health; neither did they appear to have run away at any particular place into coarse useless wood, but their look indicated the prospect of as good a crop for next year as they had borne in the present. Amongst the fifty trees occupying this wall I did not notice one that failed to do its part, and be it remembered this mode of training does not admit of one tree of a better growth than its neighbour doing a part of that neighbour's duty. All were trained to single stems, all were spurred into a bearing state, and all or thereabouts had reached the top of the house, and were also clothed with fruitful spurs to the bottom, the whole forming a feature in Peach-growing not commonly met with, and reflecting great credit on Mr. Moffat for guiding the growth of each tree with such accuracy as to preserve the proper balance between all. The trees in pots were also good, but as these had fruited I did not see them to such advantage. I may add that there were other houses conducted on similar principles that had fruited earlier; and I am not certain how long the Peach season had lasted, but it must have been a considerable time, and was far from being exhausted when I was there.

Equally good with the Peaches just alluded to, were the Grapes, in a house 65 feet long and of proportionate width, for there was an excellent crop, and the bunches all that could be desired, and although there was a good variety here, Mr. Moffat was less inclined to multiply varieties of this fruit than he was of some others, justly observing that few of the new kinds would bear the test of time as the old ones had done, and jocosely remarked he did not care how many new kinds were sent out, if they all turned out Black Hamburgs. Nevertheless, in the house alluded to there was sufficient variety to court remark, and amongst them the following were very good—viz., Foster's White Seedling, an excellent Grape, not so much grown in the neighbourhood of London as it deserves to be; Child of Hale, also a large bunch, in the way of the Nice, but said to be of better table quality; White Trebbiano, very large. Amongst black Grapes the Alicante was well represented, and deservedly so, for it is an excellent Grape when well grown; Mrs. Pince was also in a promising condition, and more compact than we often see this Grape, while the indispensable Lady Downes' was in full force, and promised to do good service in 1873. Other kinds were also there, but I regret not having had an opportunity of noticing all. The whole were in excellent condition, and fully confirmed what I had heard of the excellent fruit grown at this place. The condition of the earlier houses showed that a good crop might also be looked for next year.

As regards Figs, some good fruit were ripening on trees in pots that had been retarded; the earlier crop had been long gathered, and the trees were at rest, so necessary for renewed exertions another year. Circumstances, unfortunately, hurried me through several other of the houses without having time to look at the inmates, but amongst plants I noticed some excellent bushes of Roses in pots, which at the fitting season, no doubt, yielded their full share of bloom and buds; neither were other things wanting to complete the catalogue of useful occupants of a range of glass so well arranged as that at Hindlip.

On passing out of the glass houses one of the first objects I saw was a border of cordon Apples trained horizontally on wire at about 15 or 18 inches from the ground, and like the

Peach trees before referred to, they were spurred-in to one line. The border might be from 4 to 5 feet wide, and there was a line of trees along each side, while other cordons at right angles and diagonally made the whole appear like lattice-work, and if not pretty, it was certainly novel. There was fruit on many of the trees, but I think the general deficiency of Apples on other trees had also extended to these. The trees that were in bearing seemed to be full grown, and good in their way, and I understood from Mr. Moffat that any undue grossness of growth was met by taking up and root-pruning. This was also practised with the Peach trees in the first house, and the Pears against the walls. It is owing to this root-pruning or lifting that a moderate growth is maintained, and certainly the whole of the trees had the appearance of fruitfulness rather than undue vigour. It was evident, therefore, that great discrimination had been used, for one tree was like all the others.

We now come to, perhaps, the most important feature in

the fruit cultivation—the Pears, of which there is an excellent collection at this place. Mr. Moffat, some years ago when there was a special show of this fruit and of Apples at South Kensington, sent dishes of upwards of seventy distinct kinds, and won prizes. The crop of 1872, as well as the apparent quality, favoured a belief that he could far exceed that number at the present time. These fruits, like the Peaches, I may say, were mostly grown on single trees planted about 18 inches apart against a back wall, and trained in the same diagonal manner, each shoot being nailed perfectly straight at an angle of about 60° or so, and as they were parallel to each other, the effect was pretty. The crop was heavy, while cracked and speckled fruit were conspicuous by their absence; it would, indeed, be difficult to find better samples of most of the kinds. Even Gansel's Bergamot was clean and good, as well as abundant; while Marie Louise, Louise Bonne, Duchesse d'Angoulême, and the best French and English varieties were in abundance. The wall being high, the appearance was good;



Hindlip Hall.—Lawn side.

there were no blank places, such as often in spite of all care present themselves on walls where fan or horizontal-trained trees unite at one place and not at another. The aspect, I believe, was north-west, but a portion of the south-west wall was also devoted to the same purpose where the nature of the ground and other circumstances were unfavourable to the growth of Apricots, which, however, was more successfully done against another portion of the same wall. Plums and Cherries were also grown in the same way as Pears, but the plan did not seem so well adapted for the Cherry, especially the May Dukes and similar kinds. Neither were Apricots subjected to that close pruning; but all other kinds of fruit were trained in this fashion, and in most, if not all, with a successful result.

The first question invariably asked by gardeners when told of the well-doing of a plant or fruit is, What kind of soil was it grown in? This is, however, a more difficult matter to explain than appears at first sight; but in the matter of the Apple and Pear trees I was agreeably surprised at not seeing a single tree—at least, I did not perceive one—affected with the white moss or lichen which covers so many of our trees in Kent. This peculiarity, I need hardly say, is not confined to the trees at Hindlip, for the general stamp of old Pear and Apple trees in the county, or at all events the district, is to be without moss, the bark being in most places clean, smooth, and

healthy. Even when the annual growth was limited to the smallest fraction possible, the spur or bud was free from moss, as likewise was the older stem.

As regards the soil, lime or chalk was not so abundant as in some places, but the ground was kept open by a dark-coloured sand. Underneath the soil, which was of considerable depth, was a kind of unctuous marl more or less interspersed with gravel, rendering it accessible to such roots of trees as ventured downwards. To its fertility of character must in a great measure be attributed the great age and size of many of the Pear trees one meets with at every turn, and most kinds of fruit trees were also at home in it. I am not sure if the latter do not grow quite as well in a soil of a different kind, but most fruits and vegetables were doing well. The soil seemed to be well adapted for Strawberries as well as the more robust-growing fruit trees, but Raspberries were not so much at home, and better Black Currants may be met with elsewhere. I was pleased to see amongst other varieties of Strawberries that the old Hautbois was still cultivated, and I was told it bore well too, which is not always the case at other places.

Amongst vegetables, Celery, Lettuce, and Asparagus were evidently thriving, while the Cabbage family were not, perhaps, so successful; they require a soil somewhat different from that at Hindlip. I was sorry to hear from Mr. Moffat, as well as

from others, that the Potatoes in the district were sadly diseased, the season having been dull and wet, spoiling much hay in the fields, and also injuring Corn. At the same time the grass in the fields was nearly a foot high, and rank luxuriant herbage was met with at every turning.

In the district generally there was the same deficiency of Apples complained of elsewhere, while only some of the common Pears bore a partial crop, and that very often on trees that would appear to have outlived several generations of the gatherers. The orchards generally were in grass; even newly-planted ones were often on grass land. One of considerable extent and much promise near to Hindlip was pointed out to me as having only been planted the year before—or, rather, the stocks were so planted, and the trees grafted during the past spring. This is different practice from that adopted in most other counties, where the grafted tree is planted at once; and even if grass land be the ultimate intention of the cultivator, it is nevertheless thought advisable to keep the ground in tillage for a time. Of the merits of the two systems it is not my intention here to enter upon, but the ample rainfall of the west may make it unwise to keep so large a breadth in tillage cultivation, whereas the more eastern cultivator can keep down the weeds at a considerably less cost, and perhaps also benefit him by some ground crop. In all likelihood, therefore, a close and impartial investigation of the two systems will reveal the fact of their being both right.

Before taking leave of Hindlip I was introduced to a feature of the place which I know to be scarcely less interesting to the Editors of our Journal than the report on Pears and Peaches, and that was the poultry-yard. This department I found was under the especial patronage of Mrs. Allsopp, and certainly finer Brahmas, Cochins, and some other breeds it would be difficult to find. Some neatly arranged pens, or rather houses, had been erected for their accommodation, with ample yards; and now and then the privilege of a run-out seemed to agree with the happy family there congregated. It must be observed there was no crowding, each kind having a domicile to itself. All seemed to be well taken care of, and I have no doubt gave the worthy lady many an hour's unalloyed pleasure in witnessing their stately forms and portly development. I believe their well-doing is in some degree due to my old friend Mr. Martin, whose opinion in such matters was very wisely sought by Mrs. Allsopp, and the result can hardly be otherwise than satisfactory.

After a hearty shake of the hand with Mr. Moffat, to whose courtesy I was indebted for all I saw and heard at Hindlip, I had reluctantly to turn my back on a place possessing so much that is interesting and deserving of especial notice.—J. ROBSON.

NOTES AND GLEANINGS.

THE "GARDENERS' YEAR-BOOK," just issued, contains the most complete report on GARDEN PEAS which has ever been published.

—Not only in England, but over all southern Europe THE RAINFALL has been most excessive this autumn. Near Malton, in Yorkshire, the returns for the last three months show an aggregate of more than 14 inches—namely, 5.40 in September, 4.50 in October, and 4.20 in November.

—We are requested to state that the subscription list to the FROST TESTIMONIAL is about to close.

—ONE bunch of the DUKE OF BUCKLEUCH GRAPE, which was ripe in July, was left uncut in a viney of the Tweed Vineyard to see how long it would keep. On the 27th of November it was hanging in a state quite presentable at the table.

—HAVING spent two hours in the biscuit factory, the Japanese Ambassadors next drove to see another Reading speciality. At Messrs. SUTTON'S new warehouse in the Market Place there was a SHOW OF ROOTS, produced from the seeds sold by these well-known seedsmen. The roots, which came from all parts of the United Kingdom, were exhibited in a warehouse nearly 400 feet long and 40 feet wide; and if the size of the roots go on increasing, even this show-room will soon be too small to contain them. Though Nature is prodigal enough in their own land, the Ambassadors were astonished at the proportions reached by some of our tubers in a soil which, in their short experience of our climate, has seemed so unblest by sunshine. Turnips there are in Japan, but when Mr. Martin Sutton pointed out some of the Champion Swedes, their Excellencies could hardly be persuaded that they had not

before them some monstrous growth of abnormal size, hardly akin to the root which was familiar to them. Twenty-five of these Champion Swedes weigh 384 lbs. The Mangold Wurtzel and the Kohl Rabi seemed new to the Ambassadors, who took special interest in the roots grown on Her Majesty's farms at Windsor, Osborne, and Bushy Park, and in those shown by the Prince of Wales. They may have been impressed, too, by the republican impartiality of the judges, who awarded prizes to tenant farmers and to nobles, but gave to the Royal roots no greater praise than commendation. The Potatoes in so many kinds were viewed with interest, but over and over again the eyes of the visitors were turned to the towering bulk of the bigger roots. There were Drumhead Cabbages weighing 60 lbs. each. Twelve Long Red Mangolds, grown by the Marquis of Ailesbury, weighed 489 lbs., or an average of more than 40 lbs. a-piece. There were Mammoth Mangolds with yellow flesh, rich in saccharine matter; and the Chief Ambassador expressed a desire to enrich the national agriculture with some of these roots, as well as with the Champion Swedes, which would vary the cultivation of the white-fleshed Turnips already grown in Japan.

WORK FOR THE WEEK.

KITCHEN GARDEN.

In this department continue to trench, manure, and, where necessary, to drain the soil, preparatory to its being cropped in spring; and where the crop is to be a comparatively permanent one, as *Asparagus*, *Globe Artichokes*, or *Sea-kale*, I must again insist on thorough preparation as the only guarantee of future profit and satisfaction. Where walks require gravelling, now is a favourable time for doing it, as the late rains have loosened the surface of the walks, and they can be picked up with ease previous to the new gravel being laid on. In gathering *Brussels Sprouts* I do not cut out the crowns until spring. Some do so with the hope of inducing them to throw out more sprouts than with it; but I think it injurious at this season, as it admits moisture, which, in the event of severe frost, proves fatal to the whole stem. Stir the surface of the soil amongst *Cauliflower* plants under hand-lights, and sprinkle some charcoal dust amongst them; it will sweeten the surface of the soil, and prevent a green growth on the surface which stagnant air is apt to produce. In gathering *Spinach* see that it is done with care. Some lay hold of the whole plant and strip off a handful, which not only removes the leaves which are mature and fit to gather, but bruises and tears the young and immature ones as well, and prevents their further progress: each leaf ought to be removed individually. It may be said that these are small matters, and for the same reason they are likely to be overlooked, and require pointing-out. Let all salads, Lettuces, Mushroom beds, &c., have a due amount of protection, and if frozen suddenly do not permit them to be uncovered, but rather apply more litter to keep them frozen.

FRUIT GARDEN.

Prune Gooseberries, Currants, and Raspberries in open weather. When the frost sets in, lay a coat of manure, say 3 inches, round every bush. When the Gooseberry and Currant shrubs are old and covered with moss, a good dredging of powdered quicklime, put on when the bark is moist, will entirely destroy it, rendering the stems clean and the bark healthy. Finish all planting of fruit trees, if possible, early in the month. Get on with nailing as fast as possible, excepting Peaches and Apricots for the present. Prune Filbert trees and standard Pear and Apple trees, and where the latter have made an over-luxuriant growth dig a trench 2 feet from the stem all round, and cut some of the strongest roots, particularly any tap roots that may exist; this will induce a more fruitful condition. Of course the distance from the stem must be more or less according to the age and size of the tree; the larger the tree the further it will be necessary to keep from the stem in making the trench.

FLOWER GARDEN.

This is the most fitting period to proceed with all alterations which may be deemed necessary; these should be prosecuted now with vigour, and in order that such may not be done to the detriment of the general business, extra men should be procured. This will, when rightly understood, be less costly in the end, although apparently more so at the first. I am strongly inclined to think there is no greater pleasure afforded by the cultivation of flowers than that which the florist feels when viewing the first few opening blossoms of spring, with their cheering promises of summer and its innumerable pleasures. Those flowers which first make their appearance after the long and dreary winter are decidedly those which afford most lively gratification. The greatest want in a spring garden is a class of plants of some height for the back of the borders; there are but few, however, which are available for this purpose. The principal are the *Mezereon* (*Daphne Mezereum*), a lovely shrub, whose sweet flowers, like those of the Almond, "bloom on a

leafless bough," the Dwarf Almond (*Amygdalus nana*) and its varieties, *A. n. georgica* and *A. n. campestris*, *A. incana*, and *A. sibirica*, which seldom exceed 3 feet in height, and produce their gay rose-coloured flowers in great abundance; *Cydonia japonica* and its white variety; all the varieties of Wallflower (*Cheiranthus Cheiri*), double and single and yellow Rocket (*Barbarea præcox*), &c. In front of these may be placed clusters of the *Anemone coronaria*, *A. apennina*, *A. Pulsatilla* and *A. hortensis*, and various species of *Leucojum* or *Snowflake*, *Daffodils*, *Narcissi*, the pretty *Orubus vernus*, and others. In the front row we have a great variety averaging about 4 inches in height—*Crocuses* of several colours, *Snowdrops*, *Hepaticas*, the beautiful species of *Scilla*, particularly *S. præcox* and *S. bifolia*, with varieties, the Russian and English *Violets*, *Polyanthuses*, *Primroses*, *Sanguinaria canadensis*, *Aubrietia purpurea*, *Arabis alba*, *Jonquils*, *Dog's-tooth Violets*, *Winter Aconites*, *Van Thol Tulips*, *Hyacinths*, and many others. If the florist gets in a selection of these plants he will have the garden supplied with flowers immediately the frost leaves, and will have a continuance of them until the summer flowers begin to make their appearance. The chief anxiety of the amateur, as far as *Tulips*, *Dahlias*, *Carnations*, *Pinks*, &c., are concerned, is now brought to a close. *Tulips* ought all to be planted, and, if the bed has been properly made, will require but little attention till they are fairly out of the ground. *Dahlias* ought all to be up by this time, their tops cut off, and, after having been exposed under cover in a dry, airy place as recommended, will be ready to stow away. *Carnations* must be kept hardy—that is to say, if they have been potted early. If obtained since the middle of October they will require much more attention, for at this time of the year, being comparatively stationary, it will be found that late-potted layers are more susceptible of damp and frost than those which are well established.

GREENHOUSE AND CONSERVATORY.

Constant attention and vigilance are the requisites here, and thorough cleanliness. Let everything carry the appearance of system, and of well-matured and preconcerted plans. All watering must be done before noon, in order that a sweet, mild, and somewhat dry air may be enclosed when the air is reduced, by which period the fires, if there be any, should be very low indeed. Those *Camellias* which are now in bloom or opening their bloom-buds should stand in the lightest healthiest part, and the house where they are placed should be kept free from cold evaporation, as cold dampness at this and the coming season, for a time, is particularly injurious to the duration of the blooms and the permanency of their colours, causing blotching and mildewed spots. Healthy strong plants which are loaded with a heavy crop of bloom-buds, and are about commencing to flower, may be greatly assisted by weak applications of clear tepid manure water. If it is found necessary to apply a moderate fire to the greenhouse occasionally to dry up the dampness, the fore part of the day should be chosen while abundance of air can be given to carry off the evaporated moisture.

STOVE.

These will require a very liberal ventilation now, increasing fire heat if necessary in order to accomplish it. Still apply moisture to the air although in a diminished degree, but withhold moisture entirely from the roots of deciduous *Orchids*, or those sinking into a state of repose. Any late specimens or importations making late growths should have the lightest situation in the house, and still receive a little moisture at the roots occasionally. Light, however, is the great desideratum in order to produce those secretions on which alone depends their power of going through a long winter successfully.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

The hurricanes and rains placed work out of the question, except ridging and cleaning-up when dry. The cleaning-up was rendered more necessary owing to winds bringing leaves from great distances; and when visitors are expected these ought to be removed from the walks at least. It is of less importance moving them from quarters and borders. To many things they act as a kind of protection, and can be put out of sight when pointing-in and digging. In the way of protection we have needed nothing as yet. *Veitch's Cauliflower* is as fine as it was in September. We can endorse all that is said by Mr. Horley at page 451. We regret not measuring and weighing some wonderful heads, as compact as if they had been the size of our fist. The great complaint was that no pot or saucepan could be found large enough for them.

Lettuces young and fit to gather, Cauliflowers in hand-lights, Radishes, &c., have had abundance of air back and front, as it would have scarcely been prudent to have exposed them even during the day in such changeable weather, when no security could be had against sudden showers. Twice or thrice during the week we had sashes of pits and frames drawn back or forward, but there was a hurry-scurry to get them on again, the heavy rain came so suddenly. In such rainy but warm weather

the evil is keeping crops under glass so close as to render them tender; but the free circulation of air should be given without the risk of a drenching, for on the whole damp is quite as dangerous as even frost, and is more apt to be neglected.

Walks and roads in constant use threatened to become impassable with comfort. The mud accumulated on such after much use and these soaking rains was something prodigious, even though there was a good hard bottom. After scraping, the next rains left all clean and comfortable, and it is ever a pleasure to traverse a clean-washed road. Without the scraping, the rains would have made it more a matter of slush and mire. The scrapings in their ultimate value would generally pay for the labour. This will not hold good in sandy light districts, but in all places where the soil is rather adhesive the scrapings from roads are very valuable, as they largely consist of pulverised stone and gravel, mixed, of course, with the soil. Road-side sand carried down hills in rain storms, washed from its mud, we have ever found equal for most purposes to the finest white sand. Of course, it is little else than ground stone and flints. A good washing in a tub gives you the pure grit, and many an amateur who cannot obtain white sand from Reigate may often secure as good with little trouble in his own neighbourhood from the roads, if allowed.

FRUIT GARDEN.

The ground is still warm, and, if it were only dry, planting fruit trees might still be proceeded with. In favourable positions, where the ground is not clogged, the little superabundance of moisture will be all in favour of the roots. With the soil moderately moist, packing the roots and staking the tops to keep the roots steady are of more importance in autumn and winter planting than watering. The time to water, if necessary, is when the fibres push and the soil and the weather are comparatively dry. In sudden bursts of hot dry weather in spring and summer, a watering overhead to arrest evaporation, or even shading, to do the same, would often be more judicious than watering.

Strawberries out of doors have mostly received their winter-dressing and manuring. We place most reliance on those forced last season and turned out of pots. If the manure is a little rough and left somewhat elevated between the rows, the protection given will be all the greater. Every old leaf that will fall or be removed in spring is now so far a matter of protection to the buds. Singularly enough, troubled as we are with vermin in the shape of mice, rats, and rabbits, we have rarely had *Strawberry* plants meddled with when in the open quarters; but only give a slight protection to potted plants, and the rats want to know all about them.

We looked over our fruit-room with sadness. Our Pears have kept shockingly—never so badly in our recollection. Apples, on the contrary, have kept well. There are still some fair Grapes in the orchard house, but there is a small iron stove in it, elsewhere alluded to, that has helped to mitigate the damp. In the late vinery we have lost very few berries from damp, merely owing to putting some heat in the pipes during the day and opening the top ventilators. We have never opened the front ones, as we feared there would enter what would do more injury than damp.

ORNAMENTAL DEPARTMENT.

Walks.—These have been all swept and rolled, and this has caused the rains so to flow off them that they are comfortable to walk upon. We may mention that treble salting seems to have settled for a time the *Sedum* acre that threatened to monopolise a part to itself. The great evil of salting is, that if a thorough flood of rain comes soon afterwards the grass verges are apt to be injured, and though that injury may only extend for a couple of inches or less, it tells most unpleasantly to the eye for weeks afterwards. We have told the plan several times we adopt, instead of digging over walks, and the remedies to prevent this injury to the sides; but, nevertheless, we see that in some places, and for yards at a place, the verge shows signs of injury. There was, however, the comfort all the season of clean, bright, smooth walks.

Lawns and Flower-bed Refuse.—We join these together. Our beds were quite green; but having tried to save *Fuchsias*, *Calceolarias*, and *Scarlet Geraniums* over the winter, and succeeded only so far as to find that these did not bloom so well the next season as young or old cut-down plants; and as these large massive plants harboured the tree leaves that came from every quarter, we resolved to clear the whole off, leaving only some *Calceolarias*, &c., from which we might obtain cut blooms. For years we have made this refuse into a huge heap, as part of a rubbish heap that has greatly contributed to keep everything going; but being just now in a transition state, and with scarcity of room for such objects, we have placed many cartloads in a heap, and with the aid of a lot of rough prunings we mean to char and make ashes of the whole to get it out of our way. We by no means think that this burning is the way to make the most of such material, but we feel it is the best under the circumstances. But for the plants being so vigorous, we should have been astonished at the huge mound they present. A mixture of ashes and char is valuable. With such a mixture we dressed our

plantation of Cabbages intended for the first spring cutting, and as yet we have not lost a plant. They are growing stronger than we like, but such burnt and charred material does more to keep enemies away than anything else we know.

The thorough clearing of the lawn has been the principal job of the week, as for several reasons we wished it to look well, and it will be yet more improved by running light wooden rollers over it the first favourable opportunity. We have previously described the rollers, and for this purpose we consider them preferable to iron or stone rollers—they are so light, and yet do their work so effectually.

We have been busy shifting plants, bringing on bulbs, giving manure water to Chrysanthemums, Camellias opening nobly, Poinsettias (some cut for ornament), Eranthemums, Justicia, &c., and late Fuchsias still useful, even for single blooms; forwarding Primulas, Cinerarias, &c. We often, instead of taking the whole truss of a Primula for cut flowers—thus removing many not opened—remove the single flowers with a good long stalk, and we are frequently forced to treat scarlet Geraniums in the same way. A good truss will supply many flowers and leave some to come on.

All florists' flowers, as Auriculas, Carnations, &c., require extra attention now, that they may be kept stubby by plenty of air without being exposed to a soaking.—R. F.

TRADE CATALOGUES RECEIVED.

R. Dean, Ealing, London, W.—*Catalogue of Potatoes.*

W. Dean, 2, Canongate, Jedburgh.—*Catalogue of Forest and Ornamental Trees, Evergreens, Roses, Fruit Trees, &c.*

TO CORRESPONDENTS.

N.B.—Many questions must remain unanswered until next week.

ADIANTUM PARLAVENSE (A. B.).—You will find an article on the culture of this magnificent Fern at page 308, No. 576.

BLUE ROSE (H. S. Ford).—The phoenix, a blue Rose, has not yet been born. We are afraid we cannot give our correspondent any hopes or notes relative to the subject.

MANETTI ROSE STOCKS GROSS (An Old Reader).—The Manetti stocks that have been so long planted and have grown large with six or eight shoots on them, had better be transplanted. Cut off all shoots but one strong one, and use the shoots so cut off for cuttings, putting them in about 9 or 10 inches long, and taking all the bottom eyes out of the shoots, so as to prevent the buds pushing afterwards. Place them in rows a yard or 4 feet apart, and about 10 inches from each other in the row. The shoot left on the old stocks after transplanting need not be shortened much. Cut off as much as possible of the old wood where the shoots spring from, and plant deeply, so as to bury 3 or 4 inches of the shoot that is left. Bud on the old wood early in autumn.

LIBONIA FLORIBUNDA (R. L.).—There is such a plant, and the leaves you sent are like its leaves, but we cannot be certain without seeing the flowers. Those of *L. floribunda* are very handsome, scarlet tipped with yellow. The plant is a native of Brazil, was introduced in 1864, and requires the same culture as the Thunbergias.

SHRUBS AT A GRAVE (W. H. P.).—Within the railings Berberis Darwini, Cotoneaster microphylla, and Berberis stenophylla.

OPENING LIGHTS SIMULTANEOUSLY (S. B. H.).—You cannot do better than have all the lights connected by cranks to an iron rod, and this rod moved at one end by wheel and ratchet. We cannot enter into particulars.

PRUNING YOUNG VINES (M.).—Your young Vines have done well, but if they are intended to be permanent, do not allow them to bear much fruit until the year after next. You may take about two bunches from each rod. Prune them now. You should have encouraged the leading shoot to grow, and stopped the side shoots at the fifth or sixth leaf. Retain both rods if there are about 2 feet 9 inches between them to allow space for the side shoots to develop. In pruning, cut the young rods back to about 7 feet, and the side shoots to one eye from the main stem. The few small twigs cut clean off.

PEAR-TREE TRAINING (F. J.).—The training of the branches of the pyramid Pear trees to give them the required shape is good. Take care not to break them in bringing them to the desired position. The branches should remain tied until the habit become fixed. One year at least will be required to give the required habit, but some branches will need to be kept tied two or three years.

TRAINING AND PROPAGATING AMPELOPSIS VEITCHII (Idem).—The old shoots will not fix themselves to the wall; therefore, we should cut the plant down and make cuttings of the parts removed. Make them into lengths of two or three joints each, and insert them to two-thirds of that depth in sandy soil in a sheltered border; or you may layer the shoots in pots sunk in the ground. The young shoots will cling to the wall as they grow, but if they do not they should be nailed to it.

VIOLA EDGINGS (Idem).—Cut off the long straggling growths, top-dress with well-decayed manure or leaf soil, and point it in in spring. They will be good for another year, flowering earlier than young plants, but the bloom will not be so long continued.

DISTANCE BETWEEN CUCUMBER PLANTS (Liverpool).—Two feet will be a proper distance, but they may be planted more or less according to the extent of trellis to be covered. You will have 9 inches of rubble over the pipes, and 1 foot of soil for the plants. Asparagus forcing is treated of in another page, also in the "Cottage Gardeners' Dictionary."

VENTILATORS IN BACK WALL OF GREENHOUSE (A. W.).—The ventilators in the back wall ought not to be less than 18 inches wide and 3 feet long, they should be hung on pivots, and be immediately under the roof. There should be one under each light, which will give you 3 feet of ventilation with 3 feet

of wall between. We advise you to have all the front lights made to open, and we should have liked the top ventilation better had it been provided in the roof. The flue along the back wall we consider quite unnecessary. It would take up much room and be costly; besides, there is always a danger of flues smoking and injuring the plants. The 100 feet of 4-inch pipes will be quite sufficient to afford the heat required. The distance between the rafters is very suitable for Vines in a house in which plants are to be grown. We should plant Black Hamburgh, Trencam Black, Foster's White Seeding, Black Prince, Muscat Trovère, Muscat Hamburgh, and Muscat of Alexandria, assisting them with a little fire heat when starting and setting, and in cold periods until ripe. Instead of 16-oz., we should have 21-oz. glass. It is cheaper in the end, not being so liable to breakage.

PTERIS TRICOLOR TREATMENT (A Subscriber).—This is the name of the Fern you enclosed. It requires a winter temperature of 50° to 55° at night, and 60° by day, with a rise from sun heat to 70° or 75°. Keep rather dry during the winter, but not so as to affect the fronds injuriously; and do not syringe overhead, but keep the surfaces moist by sprinkling with water twice a day—namely, morning and evening, repotting early in March in good, sandy, fibrous peat, with a little loam and silver sand. Drain well, and keep moist and shaded from bright sun.

SMELL FROM HOT-WATER PIPES (J. R. G.).—The pipes painted with linseed oil and lamp-black will give off an unpleasant smell for some time, but it will go off after a while. Pipes newly painted give off the disagreeable smell until the paint becomes quite hard. A little air left on will prevent injury to the plants.

PLANTING CLEMATIS JACKMANNI (Thos. J. H.).—We should keep the plants as they are until March, wintering them in a cold pit or frame, with the pots plunged over the rim in ashes, and plant them out when they are beginning to grow. If you winter them in a greenhouse it is likely they will start into growth, and that with the planting-out in spring will tend to cause a weak growth next year.

LILIUM AURATUM TO FLOWER IN AUGUST (Idem).—Plant at once, and place it in a cold house or pit, plunging the pot, and protecting in severe weather. Keep it in the cold pit as long as you can afford the room, and when you remove it, give the lightest and most airy position in the greenhouse. It may be necessary to retard the plant in order that it may bloom at the time you require, and in that case place it out of doors, removing it to the greenhouse a few days before you wish it to flower, or it may be placed out of doors and protected from rain by a tiffany awning.

lichen ON FRUIT TREES (An Old Subscriber).—The best mode is to scrape the trunks and main branches with an iron scraper, such as may be formed of an iron hoop, and when this is done coat them by means of a painter's brush with a strong salt brine, adding 8 ozs. soft soap to every gallon. Brush it well into the clefts and crevices of the bark. The small branches should also be painted with this mixture, but they need not be scraped. Another mode is to paint the stems and main branches with a lime wash formed of quicklime, and dusting the smaller branches and twigs immediately after rain with quicklime. The former is the more effectual plan, and not nearly so unsightly as the lime. The only thing likely to prevent a recurrence of the lichen is draining the ground efficiently, which if not done already ought to be proceeded with at once.

DOES A YEW HEDGE ENCOURAGE RED SPIDER? (Idem).—A Yew hedge may encourage red spider in a vineyard if so near to it as to render the Vine border dry and impoverish the soil. If the roots of Yews do not encroach on the Vine border, the Vines will not be attacked by red spider. Red spider is a consequence of too dry an atmosphere and sometimes of a dry poor soil.

HYACINTH BULBS DISPLANTED (F. W.).—The bulbs have been raised out of the soil in consequence of the roots not having entered it freely. The soil was probably wet when the bulbs were potted, and being pressed would become quite hard, and if it was not made firm round the bulb the resistance upwards would not be so great as that to the passage of the roots downwards, hence the roots lifted the bulbs out of the soil. This result would most likely not have occurred had they been covered with 6 inches of spent tan, cocoa-nut refuse, or other material. The inverted small pots would not tend to keep the roots from lifting the bulbs. There is nothing wrong in your treatment, only not allowing the covering material to rest on the bulbs.

CUTTING-DOWN FERNS AND LYCOPODS (H. E. S.).—They should only be cut down as the growths become dead or unsightly from age, and that will vary in different species. They should, therefore, have the old, sere, or brown fronds removed as they appear. Do not pot until March, and keep them somewhat less moist in winter than when growing freely.

FORMING A BLACKBERRY PLANTATION (J. R. Barton).—We presume by Blackberry you mean the Bramble, as the Dorchester variety. The only cultivation required is to plant in rows 6 feet asunder, and place the plants 4 feet from each other in the rows. The soil should be rich, light, well dug, liberally manured, and free from stagnant water. The shoots should be trained like Raspberry canes, either to upright stakes, or they may be arched over, and the shoots of the current year disposed of around the plants. When the old canes are cut away the young shoots should be tied to the stakes or arched over, whichever mode is employed. Any superfluous shoots should be cut out along with the old dead wood. They will produce large fruit if well manured. They should have an open sunny situation.

PLANTING A CONICAL BANK (F. T.).—The arrangement of the Pine tribe on the sloping bank is all very well, and will be effective whilst the trees are young, but if the four rows of curved lines of trees on the bank are to be contained in a space 40 yards by 20 yards, you will ere long have to thin-out unmercifully. Just think how many square feet a tree will need twenty years hence. Under the circumstances you may choose them to be removed before that time as single specimens. That is quite a different affair. For present effect, the plan will be effective with nice young trees.

PROPAGATING CAMELLIAS (H. A. L.).—Cuttings of the single varieties should be taken off the new wood when it has become nearly ripe, which it will be by the beginning of July. The pots for the cuttings should be well drained, and filled to the rim with sandy loam, pressing it firmly, and surface with about half an inch thick of silver sand. The cuttings ought to be 4 or 5 inches long, and cut off clean and level just under a bud; take off the lowest two leaves and insert the cuttings to that depth in the soil, putting them in about an inch apart. Place them in a cold frame and keep them close, moist, and shaded from bright sun. In about three months they will be well rooted, and should be potted-off singly in 8-inch pots filled with sandy peat and loam; return them to a frame, and before severe weather remove them to a greenhouse, giving the treatment of older plants. Encourage with plenty of moisture and a little extra heat during the growing season, and

many of them will be ready for grafting the following season. February is, perhaps, the best time for grafting. Tongue-grafting is the preferable mode. After grafting set the pots on coal ashes in a pit or shady part of the greenhouse, and cover them with hand-glasses, which should be left over the plants until the grafts begin to grow, then gradually admit air, and ultimately remove the hand-glasses, and treat as established plants. If the light be strong where the cuttings are placed, it is well to paint the hand-lights on the inside with a size of whitening and milk.

CONSUMPTION OF FUEL (Hamburg).—It would be perfectly illusory for us to say what your weekly consumption of fuel ought to be, and, what is more, most of the published statements on this subject we consider to be illusory. In some weeks in winter we consume so many bushels; in other weeks in a similar time, with a change of weather, we consume tons. We are sorry to say that furnace-tending does not advance. Few, unless grounded by some old gardener, know anything about it.

NOTICE TO GARDENER'S ASSISTANT (T. C. C.).—As your wages were paid weekly you were not entitled to a month's notice before being discharged. Living in the garden both makes no difference.

LEAVES DISEASED (G. J. B.).—They are not from the *Agalmia*, but probably from an *Aschyranthus*. The "warts" are a fungus, and would probably be removed by dusting with flowers of sulphur and subsequent sponging. Exposure to more light would probably prevent their recurrence.

HARES BARKING TREES (K. M. H.).—Dip strips of brown paper in gas tar, and bind them round the stems of the trees as high as a hare can reach.

PROTECTING ROSES (R. J. S.).—We do not as a rule advise much protection to Roses, even the tender kinds, unless in exposed situations. If, however, such kinds as *Marchal Niel*, *Céline Forestier*, &c., are trained on arches, it would be well to tie evergreen branches of spruce loosely over the upper part, to protect against the direct radiation on the upper surface of the branches where most exposed. Mule the roots with good manure, but leave the manure uncovered—that is, do not throw soil over it to hide it. No doubt mulchings of manure are not very slight, but the utility must make-up for the appearance, and covering over the manure with soil often promotes the growth of fungus on the stems of the Roses so covered. Moveable coverings are, no doubt, much to be preferred to those permanently fixed for the winter, but this generally entails more work, care, and attention than can be usually given. We are glad you have turned your standards into arched waks by planting dwarfs at the base, and putting pillars and arches to train the standards and dwarfs to, as nothing is, in our opinion, more contrary to the habit of growth of a Rose than the system so generally adopted at one time of growing Roses only as standards. We hope before long such a thing as a standard will never be planted. It is difficult to grow the queen of flowers under any circumstances so as not to make it still beautiful, but when standards only were grown, and the heads pruned and pinched in to make a symmetrical mop, all grace of form was done away with, and the flowers were never so good as on plants grown in a more natural way. We, consequently, hail every movement which may help to do away with standards.

PROPOSED GREENHOUSE AND ORCHARD HOUSE (Novice).—First, we think that for such a space of 33 feet long, it would not be advisable either in appearance or in economy, to make different heights. The back wall being 9½ feet, we would make the front wall from 4½ to 5 feet. By this mode you could have the walk near the centre, a tree border at back and front in the one case, and a stage at back and a platform in front in the other. The width of the house might be from 9 to 10 feet, the height of glass in front as much as you like. We hoped to have a house this summer, but the place is still empty, height of wall 10 feet, width of border 10 feet, height of front, merely glass and wood, with wooden ventilator, 4½ feet, with a walk down the middle. We could there grow tall plants, or short plants at the back, and dwarf stubby plants in front, and with a stage or platform, there would be storage room for many things beneath.

HEATING (A Young Gardener).—We almost forget the case. We wish our readers would direct us to former answers, and bear in mind that we are unable to keep such letters. From what we can understand of your tracing, the whole arrangement appears to be a very exceptional one, which no one can work with pleasure or economy. In your case we think there would be no danger in stopping the valve on the return-pipe; but then, for many years, we have never troubled ourselves with returns, but then we like the flows for different houses to be on the right level. All sinking below boilers should be avoided.

SLOW-COMBUSTION STOVE (Bessmount).—Any stove fitted with tight feeding-door, or opening and tight-fitting ashpit-door, with careful management will become a stove of slow combustion. That alluded to, was made by Messrs. Green & Brown, of Luton. It is a round stove some 31 inches in height, three feet, on which it stands, raising it still higher, but having only that connection with the stove. It is about 15 inches in diameter, and 4½ inches in circumference, inside measure. The peculiarity is, that it is fed from the top, that top fitting so tightly in a groove that no smoke escapes, but goes freely up a side pipe placed some 6 inches from the top. We had a prejudice against this moveable top, thinking that, in the feeding, smoke would get into the house, but this is almost totally prevented by a moveable funnel some 2 inches wide. The smoke strikes against the sides of this narrow funnel, and is turned back into the smoke-pipe. The fireplace is lined with firebrick. The ashpit-door fits closely and has a revolving ventilator. A very small opening supplied enough of air for combustion when only a moderate heat was required. Another peculiarity was a small opening nearly opposite the smoke-funnel, a little air turned on which did much to diminish any appearance of smoke. After trial we should desire no stove as better for general purposes, and where a short horizontal pipe could be carried into a chimney. It did good service, and after being taken down it does good work in another place. We merely had a short side pipe, and took an upright one through the roof. Owing to the moveable top we could not neutralise the dryness except by placing some large pans of water round it on the floor. We found that *Geraniums* and *Camellias* flourished as well close to the stove as at the farther end. For plant culture we would prefer being able to place a large zinc or iron pan on the top of the stove, so as to produce vapour when wanted. With an old square stove having a square top fitted with such a pan we got on very well, but after all our patching and mending, and binding with copper wire, &c., it would no longer hold together. The same principles alluded to in the round stove must be kept in mind in the square one, if effectiveness and economy of fuel are concerned. The furnace would hold about a peck, or a little more, of coke, broken so as not to have the pieces, say larger than hens' eggs, a good portion smaller still, but not much mere dust. In a mild night with just a little air on the ashpit-ventilator, the fuel would be all aglow in the morning. In a cold night with more air on the fire would

be burned out, though replenished after 10 P.M. We cannot, owing to misplacing memoranda, tell exactly what heat the stove gave out, but though placed at the end of the house, we never found the temperature after the coldest night below 38° in the morning. The general run with some 5° to 6° of frost outside, was from 40° to 45°. In mild nights but little firing was used.—R. F.

ARUM ITALICUM AND LILIUM CROCEUM CULTURE (An Old Subscriber).—Plant the *Arum* in rich light soil in a warm position, or at the base of rock-work, covering the bulbs about 2 or 3 inches deep, and mulch over the spot with an inch thick of partially decayed leaves. Water freely in summer. The *Lilium* may be planted now in an open situation, sheltered, however, from winds. Plant in rich light soil; add leaf soil and a little peat, about a fourth of each. Plant 3 inches deep, placing some sand under, round, and over the bulbs, then cover with soil.

WINDOW FERNERY (A Young Reader).—By exercising a little ingenuity we think you may have the window-case quite well filled with Ferns, especially as it faces east, which is an aspect suitable for Ferns. We should have the two sides formed into rockwork with what is known as virgin cork, forming some projections with good pockets to hold soil for plants, and have hollows to receive soil. By some skill you may form a picturesque arrangement of rockwork. At the bottom we should provide a tray about 3 inches deep, and have a small pipe to the outside with a tap; the tray to receive the water draining from the rockwork, and the tap to draw it off as required. The tray should be of zinc, and have a cover of the same perforated. We should form the base into rockwork as well as the sides of the case. The roof of the case should also be covered with rock, taking care in all the arrangements to give a rustic appearance, and to provide holes, crevices, or recesses for soil and plants. We should then fill all the recesses with soil—in fact all the openings left for plants. The most suitable mixture is two parts sandy peat, one part each cocconut fibre refuse and fibrous loam, with a sixth part of silver sand, and the same of sandstone broken up in pieces varying from the size of a pea to that of a walnut, not taking out the small, and mixing all well together. Place the soil in all the openings, and then proceed to plant. We should plant at the base the taller kinds, as *Nephrolepis tuberosa*, *Pteris umbrosa*, *Polypodium pectinatum*, *Onychium japonicum*, and *Nephrodium molle corymbiferum*, giving prominent positions to *Doodia aspera*, *D. caudata*, *Lomaria L'Herminieri*, *L. Patersoni*, *Asplenium bulbiferum*, *A. dimorphum*, *A. flabellifolium*, *A. monanthemum*, *A. Veitchianum*, *Adiantum pubescens*, and *A. cuneatum* for the recesses; whilst for the projections, *Adiantum assimile*, *A. Capillus-Veneris*, *A. setulosum*, *Acrophorus hispidus*, *Davallia canariensis*, *D. dissecta*, *Lastrea glabella*, *Niphobolus lingua* and var. *corymbifera*, *N. rupestris*; and at the top we should have a plant of *Platyceerium alcinome* on a block of wood inverted. A few small hanging baskets would be effective if planted with such subjects as *Niphobolus lingua*, *N. rupestris*, *Adiantum Capillus-Veneris*, *A. setulosum*, and *Acrophorus hispidus*. We should further plant at the foot of the window or bottom of the case, and train to each side a plant of *Lygodium scandens*—that is, to the inner side of the window or foot of the case, whilst the outer window-frame-work we should cover with *Ficus repens*, confining it to the woodwork. We presume there are shutters to the window, and in that case we do not think you have anything to apprehend from frost; and the plants being duly supplied with moisture, which may be applied with a syringe, we think you will have a pleasing case of Ferns.

NAMES OF PLANTS (W. M.).—Your *B. duleis* is *B. Darwinii*; *B. Darwinii* is *B. stenophylla*; *L. latifolium* is *L. angustifolium*; and *L. thymum* is correct.

POULTRY, BEE, AND PIGEON CHRONICLE.

THE BIRMINGHAM POULTRY SHOW.

The enchanter's wand has been at work, or the executive of the Birmingham Show possess Aladdin's lamp. They are hindered by no consideration of expense, they are deterred by no difficulty. That which was faintly whispered last year is now found to be accomplished. It has long been a complaint that the poultry bay was crowded, that the light was deficient and partial. It has all been remedied. A wide and capacious gallery has been erected round the whole of the Hall devoted to poultry. The requisite light has been supplied by removing slates from the roof and substituting glass, and we think more may be done in that way. The disposition of the pens has been entirely altered. Instead of the three or four interminable alleys of the older days, there are now but two that run the length of the building. The rows of pens stretch from one side to the other, and are thus enabled to receive the downpour of direct light from a roof with a glazed centre, while the extremities are well lighted by occasional glazed openings in the sides of the roof. We anticipate that many who have given up coming to Bingley Hall, on account of their inability to encounter the crowd, will no longer deprive themselves of their pleasure, but, hearing of the comfort and facility with which it may now be visited, they will resume their attendance. Viewed from either end of the new gallery, the *coup d'œil* is charming. The crowd seems like a huge serpent twisting in and out the short alleys, and the truth of the old police adage is seen, that there is neither danger nor discomfort in a crowd if its power and pressure are divided.

The prize list is so full of information that we shall content ourselves with a notice of each class as we come to it.

That which we say at the outset when we begin about *Dorkings* we shall often have to repeat—the old cocks were better than the young ones. We could but think of the time when 9 lbs. were considered the extreme weight of a Dorking cock. We know

that many years ago one of the first poulterers in London was asked for the largest Dorking cock that could be got. It was for a particular purpose, and he was much lauded for a bird that weighed 9 lbs. Had he lived in our days, he might at Birmingham have bought one 2 lbs. heavier. All the cocks in both classes were good in weight and symmetry, and formed excellent classes.

The hens and pullets were worthy of their relatives, and mustered in goodly numbers. There were many hens over 9 lbs. each, and that was not the result of fat, but good scaffolding and succulent flesh. There would have been little difficulty in picking a pair, a cock and hen, that would have weighed 21 lbs., and if a pound more were wanted it could have been had. With some exceptions the hens were not in very high condition. This brings us to an end of 152 pens.

Many beautiful birds were shown in the next classes, but it is evidently very difficult to come up to their requirements. We allude to the Silver-Greys. It is hard to disqualify an otherwise perfect bird because it has a few white feathers on the breast, but it is necessary. There is a tendency in the pullets to have too much salmon colour. In some instances it pervades the wings, back, and shoulders. They are on the increase. They brought fifty-one entries. The White Dorkings were excellent, especially the old cocks. They have seldom been seen as good. The young cocks and the hens and pullets showed very superior specimens that for size might have competed with their darker brethren.

The adult Buff *Cochin* cocks made, we think, one of the best classes we ever saw. They had size, colour, and symmetry, and there were twenty-nine of them. The young birds were very good, but they appeared small after the old ones. The hens were very meritorious, many of unusual weight and size, but as a class they lacked condition, and were in that respect inferior to the pullets. Many of these latter left nothing to be desired, and we were delighted to see these old and deserving favourites in such force in numbers and merit. They filled 250 pens. The Brown and Partridge *Cochins* showed careful selection. As with the Silver-Grey Dorkings the presence of a few white feathers disqualifies, so in these cocks a few buff feathers in the breast disqualify him. As we had to mention the prevalence of the salmon tinge on the Silver-Grey pullets, so we could not help noticing a yellow tinge on many of the Partridge pullets.

The Dark *Brahmas* were very beautiful, and we were glad to note that vulture hocks were not as prevalent as we have seen them. The cocks were a very fine class, and there were splendid specimens of this beautiful breed. The estimation in which they are held will be sufficiently proved by the fact the Dark alone contributed 238 entries to the Show. It is only of late the Light variety has occupied a prominent position with the public, yet there were 142 pens shown. They deserve favourable mention as well as their Dark companions. The cocks were large and heavy, and the pullets beautiful with their white plumage, striped hackles, dark tails and flights. The Dark pullets were many of them perfect in their pencilling, well marked up to the lower beak.

The good old town-loving fowl, the *Malay*, though more numerous than of late, were few; only twenty-nine pens entered the lists, and they were not in any way remarkable.

The *Crève-Cœurs* mustered thirty-nine, and were excellent. It would seem of this breed that transplantation agrees with them. They have plainly improved since they were first shown in England. They are much larger and heavier than they were, and they have evidently more constitution. Many of the cocks shown might vie with Dorkings for size and weight, and their square forms give assurance to those who can overlook black legs that they are not to be scorned for the table.

If so much may be said about the *Crève-Cœurs*, what shall we say for the *Houdans*, represented by eighty-nine pens? There is rollicking, devil-may-care, Robert Macaire-like look about the head and face of a cock of this breed that cannot be mistaken. Dorkings have taught us to respect five claws in a table fowl, and we therefore are predisposed in favour of this breed. The specimens were of the highest class, good, square, useful birds. That which we said of the *Crève-Cœurs* may here be repeated—the climate and treatment of England agree with them. Better birds of both breeds are bred in England than can be imported.

Spanish showed in good form, and furnished seventy pens; but they are not the Spanish of former times. We do not pretend to say we could not find perfect specimens, or that we could not have made-up pens that would have been faultless or nearly so, but the general type of the class is lower and less numerous.

We are admirers of the *Hamburghs*, there is a cheerful jauntness in their air and appearance which always pleases us. Nothing could exceed the beauty of the Golden-pencilled; some of them were equal to anything we ever saw, and had the prizes been ten times as numerous, worthy recipients could have been found for all. The Blacks were also excellent. The clean-cut white deaf-ear, the red comb and glossy black plumage, form an agreeable and pleasing contrast. We cannot award the same praise to the Silver-pencilled. They, like the Spanish, are not

equal to those of old times. With rare exceptions they were not a good class. The Spangled birds were very good, but in them we preferred the Golden to the Silver.

The *Polands* were sufficiently numerous to bring twenty-three pens into the prize list, and were equal to anything we ever saw. We would especially name the Silver and the Black with white tops. They were perfect in clean-cut markings, and in the size and colour of their top-knots.

In the Various class there was not the usual collection of novelties. The *La Flèche*, which for some years have had a class to themselves, have now returned to this refuge for the destitute, and two of them took a first prize. The second went to a very good pair of *Silbies*.

It is difficult to say more for the *Game* than that they were a show of themselves. Every variety seemed bent on distinguishing itself. The first-prize Black Red, Brown Red, and Duck-wing were such as might give the world assurance of what a *Game* cock should be. But there were not wanting some that were ridiculous, inasmuch as they had more of the *Malay* than *Game* in them, and had as much pretension to one as to the other class. Exhibitors of such did not confine themselves to cocks, but showed pullets in numbers presenting the same undeniable proof of the cross. It would be hard to say which was the best bird, but we should be disposed to take the Black-breasted Red birds that took the cup and first prize. The Duck-wings were numerous, and showed signs of improvement. Our old favourites, the Gold and Silver *Sebrights*, can make but a poor show with two colours mixed in one class. The Black, White, and *Game* have overrun them. The latter especially form very numerous classes, and show almost as many varieties as their larger brethren.

The Rouen *Ducks* have quite eclipsed the *Aylesburys*—fifty-one pens of the former to fourteen of the latter. The Rouens are also the heavier. There were pairs of birds that weighed more than 22 lbs. the pair. An average may be taken at from 7 lbs. to 8 lbs. each bird throughout the class. Mr. Robertson Gladstone's first-prize birds weighed 19 lbs. 10 ozs., and he had another pair 2 ozs. heavier. Mr. S. Burn's weighed 22 lbs. 2 ozs. Mr. Fowler's *Aylesburys* weigh 18 lbs. 12 ozs. The Black Ducks were, perhaps, the best show of the breed that has ever been seen. Small size, beautiful plumage, and perfect symmetry, were the characteristics of the class. Exhibitors in these classes must bear in mind these are all birds of feather; and although great weight is looked for in the Rouens and *Aylesburys*, and diminutive size in the East Indian, yet important as these points may be, they can only be successful when allied to perfect plumage.

The comparatively new classes for *Ornamental Waterfowl* are become a great success, and bid fair to form one of the most attractive classes in the Show. Nothing could exceed the beauty of the Carolina and Mandarin Ducks. Twenty-two pairs of them were shown. But there were also Casarkas, Bahamas, Teal, Whistling Ducks, Sheldrakes, Call Ducks, and others.

The *Geese* were very large and meritorious, but their weight did not exceed those of former years, nor did the entries. Mr. J. K. Fowler sent a pair of White Geese weighing 56 lbs. 2 ozs., and his prize birds of the present year weighed 50 lbs. 2 ozs., and his Grey and Mottled 53 lbs.

Turkeys increase yearly, and their weights bid fair to go on till the supposed tables of former times become the sober facts of our days. On this occasion one cock from Mr. Lythall weighed 38 lbs. 5 ozs., and a bird of this year 29 lbs., while two hens weighed 32 lbs. Mr. F. E. Richardson's first-prize hen weighed 32½ lbs., while one of the present year from Mr. Lythall weighed 31 lbs. We were sorry to see the pure American is disappearing, being merged in the Cambridgeshire. Many of the best birds shown were a cross between these breeds.

The Pigeons will be reported on in our next.

DORKINGS (Coloured, except Silver-Grey).—*Cocks*.—1 and Cap. W. H. Denison, Woburn Sands. 2, J. Longland, Grendon. 3 and 4, N. Russell, Baschurch, Salop. *hc*, H. Yardley, Birmingham.

DORKINGS (Coloured, except Silver-Grey).—*Cockerels*.—1, 2, and 3, Mrs. Arkwright, Chesterfield. 4, Mrs. E. Wheatley, Ingatstone. 5, J. Longland. 6, J. Copple, Prescott. *hc*, Mrs. E. Wheatley (2); Rev. J. G. A. Baker, Biggleswade (2); J. White, Warlaby, Northallerton; Miss Whittington, Henley-in-Arden; R. D. Holt, Windermere; J. Drewry, Burton-on-Trent; E. Fearon, Whitehaven. *c*, E. Miles, Tenbury; N. Russell (2); Rev. J. G. A. Baker.

DORKINGS (Coloured, except Silver-Grey).—*Hens*.—1, R. W. Beachey, Fluder, Kingskerswell. 2, Mrs. E. Wheatley. 3 and 4, J. White, Warlaby, Northallerton. *hc*, Miss Fairhurst, Ormskirk; Colonel Lane, Bracknell; J. Copple; Mrs. E. Wheatley.

DORKINGS (Coloured, except Silver-Grey).—*Pullets*.—1, Mrs. Arkwright. 2 and 5, Mrs. E. Wheatley. 3, Miss Davies, Chester. 4, R. W. Beachey. 6, J. Copple. *hc*, Colonel Lane; J. Copple; Mrs. E. Wheatley (2); Miss Davies; Miss Whittington.

DORKINGS (Silver-Grey).—*Cocks*.—1, R. D. Holt. 2, W. H. Denison. **DORKINGS** (Silver-Grey).—*Cockerels*.—1, R. D. Holt. 2, H. Yardley. *hc*, J. Horton, Jun., Shirley (2); R. D. Holt. *c*, Lady Bagot, Rugeley.

DORKINGS (Silver-Grey).—*Hens*.—1, W. W. Rutledge, Shortend, Kendal. 2, O. E. Cresswell, Bagshot. *hc*, T. Ralnes, Stirling. *c*, Countess of Dartmouth, Patehill, Albrighton; Lady Bagot.

DORKINGS (Silver-Grey).—*Pullets*.—1, Countess of Dartmouth. 2, R. D. Holt. *hc*, O. E. Cresswell.

DORKINGS (White).—*Cocks*.—1, J. Robinson, Garstang. 2, J. Choyce, Atherstone. *hc*, O. F. Cresswell; J. Robinson. *c*, Miss Fairhurst.

DORKINGS (White).—*Cockerels*.—1, Mrs. Hayne, Fordington, Dorchester. 2, O. E. Cresswell. *hc*, Countess of Dartmouth. Rev. F. Tearle, Newmarket (2); J. Watts, King's Heath, Birmingham. *c*, Miss Fairhurst.

DOCKINGS (White).—Hens.—1, J. Robinson. 2, J. E. Cresswell. *hc*, J. Choyce Rev. F. Tearle.

DOCKINGS (White).—Pullets.—1, J. Robinson. 2, O. E. Cresswell. *hc*, Capt. Oliver. Towcester; Countess of Darlington; J. Choyce.

COCHIN-CHINA (Cinnamon and Buff).—Cocks.—1 and Cup, W. A. Taylor, Manchester. 2, H. Lacy, Hebbel Bridge 3 and 5, H. Tomlinson, Gravely Hill, Birmingham. 4, M. Allsopp, Worcester. *hc*, Lady Gwydyr, Ipswich; T. Stretch; J. Bloodworth, Cheltenham; W. A. Burnell, Southwell; Mrs. Allsopp; R. White, Shirebrook, Sheffield. *c*, W. A. Taylor; R. White.

COCHIN-CHINA (Cinnamon and Buff).—Cockerels.—1, Cup, and 6, W. A. Taylor. 2, Mrs. Allsopp. 3, H. Tomlinson. 4, Lady Gwydyr. 5, W. A. Burnell. *hc*, Lady Gwydyr (2); H. Tomlinson (3); Mrs. Allsopp; W. Harvey; H. Lacy; W. A. Burnell (2); Henry Lingwood, Needham Market; W. A. Taylor. *c*, W. A. Burnell.

COCHIN-CHINA (Cinnamon and Buff).—Hens.—1, W. A. Taylor. 2, H. Tomlinson. 3, H. Lacy. 4, Mrs. Woodcock, Leicester. 5, T. F. Ansell, Cowley Mount, St. Helens. *hc*, Henry Lingwood; T. Stretch; W. P. Ryland, Erdington (2); Henry Lacy. *c*, H. Lloyd, jun., Handsworth, Birmingham.

COCHIN-CHINA (Cinnamon and Buff).—Pullets.—1, 4, and 6, W. A. Taylor. 2, Lady Gwydyr. 3, G. H. Procter, Durham. 5, R. Allen, Shindda Hir, Town, Conway. *hc*, Lady Gwydyr; W. Harvey; J. Cattell; T. Stretch; E. Fearon, Whitehaven; D. Young, Leamington; Mrs. Allsopp; C. Bloodworth, Cheltenham. *c*, K. Chase; J. Cattell; H. Tomlinson.

COCHIN-CHINA (Brown and Partridge-feathered).—Cocks.—1 and 8, T. Stretch. 2, W. A. Taylor, Manchester. *hc*, R. White; H. Lacy. *c*, E. Tudman, Ash Grove, Whitechurch.

COCHIN-CHINA (Brown and Partridge-feathered).—Cockerels.—1 and 2, E. Tudman. 3, W. A. Taylor. *hc*, G. Lamb, Compton (2); R. White; J. Taylor, Birmingham; W. A. Taylor; E. Tudman. *c*, J. Brown, Kerworth, Derby.

COCHIN-CHINA (Brown and Partridge-feathered).—Hens.—1 and 8, E. Tudman. 2, T. Stretch. *hc*, W. A. Taylor.

COCHIN-CHINA (Brown and Partridge-feathered).—Pullets.—1, E. Tudman. 2, T. Stretch. 3, W. A. Taylor. *hc*, G. Lamb.

COCHIN-CHINA (White).—Cocks.—1, Whitehead & Beachey, Fluder, Kings-Gravelly Hill, R. S. S. Woodgate, Pembury, Tunbridge Wells. *hc*, G. H. Procter, Durham.

COCHIN-CHINA (White).—Cockerels.—1, Whitehead & Beachey. 2, H. Tomlinson, Gravely Hill, Birmingham. 2, E. Smith, Timperley. *hc*, R. S. S. Woodgate; J. H. Law, Small Heath, Birmingham; Whitehead & Beachey. *c*, Miss Hales, Canterbury.

COCHIN-CHINA (White).—Hens.—1 and 2, R. S. S. Woodgate. 3, J. Railton, Roseland, H. Mander, Manchester. *hc*, E. Fearon, Whitehaven. *c*, A. J. E. Swindell, Heathland, Stourbridge.

COCHIN-CHINA (White).—Pullets.—1, Mrs. Williamson, Queensboro' Hall, Leicester. 2, R. S. S. Woodgate. 3, R. Chase, Birmingham. *hc*, E. Fearon; Whitehead & Beachey (2); J. K. Fowler, Aylesbury. *c*, J. Bloodworth, Cheltenham.

BRAMA POOTRA (Dark).—Cocks.—1, G. Maples, jun., Wavertree. 2, Rev. J. G. B. Knight, Danbury, Chelmsford. 3, W. F. Wright, Sutton, Scarsdale, Chesham. *hc*, W. Hargreaves, Huttock Top, Bacup; H. Lacy. *c*, T. F. Ansell; I. Nutsey, Alford.

BRAMA POOTRA (Dark).—Cockerels.—1, Cup, and 4, L. Wright, Crouch End, London. 2, Hon. Miss D. Pennant, Bangor. 3, H. Lacy. 5, G. Palfreyman, jun., Heeley, Sheffield. 6, H. B. Morrell, Gae Mawr, Clryce. *hc*, Mrs. Woodcock; L. Wright; E. Ensor, Alfred Hill, Bristol; Horace Lingwood (2); H. Tomlinson; H. B. Wood, Wuxotter; F. Bennett, Shifnal, Salop; Hon. Mrs. E. Hamilton, Ridgmont, Woburn; E. Leech, Rochdale; H. P. Moor, Oxleigh, Stoke Gifford, Bristol; Countess of Haddington, Coldstream; Dr. Holmes, Whitecoats, Chesham. *hc*, H. Lacy; Rev. J. Richardson, Sandy Rectory, Beds; Dr. Holmes; Countess of Haddington; Lady Gwydyr.

BRAMA POOTRA (Dark).—Hens.—1 and 2, T. F. Ansell. 3, J. Watts. *hc*, H. B. Morrell; H. Lacy; W. Hargreaves, Huttock Top, Bacup. *c*, L. Wright; E. Pritchard; H. B. Wood, Wuxotter; F. Bennett, Shifnal, Salop.

BRAMA POOTRA (Dark).—Pullets.—1, Mrs. Arwight. 2, W. Arwight. 3, T. F. Ansell. 4, H. B. Morrell. 5, R. Tebbay, Fulwood, Preston. 6, G. Jones, Goldthorn Hill, Wolverhampton. *hc*, W. B. Etches, Whitechurch (2); Col. Lane, Lilly Hill, Bracknell; G. Maples, jun., Wavertree, Liverpool; Dr. Holmes; R. Tebbay; Countess of Haddington (2). *c*, H. Beldon, Gostick, Bingley; Hon. Mrs. E. Hamilton, Ridgmont, Woburn; Horace Lingwood; F. Kendrick, jun., Lichfield.

BRAMA POOTRA (Light).—Cocks.—1, Mrs. Williamson. 2, H. M. Maynard. 3, Mrs. D. T. Turner, Avon, Ringwood. *hc*, W. T. Storer, Shutt Green, Broadway; J. Benton, Erdington.

BRAMA POOTRA (Light).—Cockerels.—1, F. Crook, Forest Hill, London. 2, W. T. Storer. 3, L. H. Ricketts, Banwell. 4, C. Morris, Holmleigh, Grassendale. *hc*, Mrs. Allsopp, Wimpole Hall, Worcester; W. T. Storer; T. A. Dean, Marden; J. R. Rocks, Ashdon-on-Glenn, Salop; J. Benton; Countess of Haddington; M. Leno, Markyate Street; J. R. Rodbard, Aldwick Court, Wington, Bristol; H. M. Maynard; F. Crook. *c*, R. Fulton, London; W. T. Storer.

BRAMA POOTRA (Light).—Hens.—1, J. R. Rodbard. 2, Lady Gwydyr. 3, F. Crook. *hc*, M. Leno. *c*, F. J. Cottrell, Beechfield, Birmingham.

BRAMA POOTRA (Light).—Pullets.—1, F. Crook. 2, Countess of Haddington. 3, Mrs. Williamson. 4, T. A. Dean, Hereford. *hc*, Countess of Haddington (2); J. R. Morris, Benton, Erdington; Birmingham; F. J. Cottrell; Mrs. Will amson; Rev. J. D. Hoisted; E. H. Langman, Wolverhampton; H. M. Maynard, Holmewood, Ryde, Isle of Wight; W. P. Dewes, Ashby-de-la-Zouch.

MALAY.—Cock.—1, Rev. A. G. Brooke. 2, W. B. Payne, Shrewsbury.

MALAY.—Cockerel.—1, R. Hawkins, Sunderland. 2, Rev. A. G. Brooke.

MALAY.—Hen.—1, W. Lort, King's Norton. 2, Rev. A. G. Brooke. *hc*, W. B. Payne; W. Lort.

MALAY.—Pullet.—1, R. Hawkins. 2, W. B. Payne.

CREVE-CEUR.—Cock.—1, E. Smith, Timperley. 2, R. B. Wood. *hc*, H. Feast, Swansda.

CREVE-CEUR.—Cockerel.—1 and 2, R. B. Wood. *hc*, Miss Mortimer, Rudhall, Ross; J. K. Fowler. *c*, E. Pritchard, Tettenhall.

CREVE-CEUR.—Hens.—1, W. R. Park, Melrose. 2, R. B. Wood. *hc*, W. Dring, Faversham. *c*, Rev. C. O. Eybank.

CREVE-CEUR.—Pullets.—1 and 2, R. B. Wood. 2, J. K. Fowler. *c*, Rev. J. Richardson.

HOUDANS.—Cocks.—1, R. B. Wood. 2 and *hc*, W. O. Quibell.

HOUDANS.—Cockerels.—1, R. B. Wood. 2, W. Outlack, jun., Littleport. *hc*, Mrs. Whinfield, Worcester; F. Bennett, Shifnal, Salop; B. Heald, Nottingham; C. Morris, Grassendale. *c*, W. O. Quibell.

HOUDANS.—Hens.—1, C. Morris. 2, W. O. Quibell. *hc*, Rev. C. B. Rowland; F. Bennett; E. B. Wood.

HOUDANS.—Pullets.—1, W. Dring. 2, D. Lane, Hardwick, *hc*, D. Lane; W. O. Quibell; B. Heald, Nottingham; R. B. Wood. *c*, J. K. Fowler.

SPANISH.—Cock.—Cup, E. Jackson, Finchfield, Wolverhampton. 2 and *c*, Hon. Miss D. Pennant.

SPANISH.—Cockerels.—1, A. Mollons, Standford, Wolverhampton. 2, W. Wooley, Bunbury, Tarporley. 3, E. Jones, Clifton. 4, R. Tebbay. 5, Hon. Miss D. Pennant. 6, A. Jones, Stapleton, Bristol. *hc*, J. Walker, Standford, Wolverhampton; Hon. Miss D. Pennant; F. Cooper, Hanley. *c*, Mrs. Allsopp; E. Jackson; J. H. Raby, Stourport.

SPANISH.—Hens.—1, E. Jackson. 2, Mrs. Allsopp. 3, Mrs. Tonkin, Bristol. *hc*, H. Beldon; R. Tebbay.

SPANISH.—Pullets.—1, R. Tebbay. 2 and 3, E. Jones. 4, A. Mollons.

HAMBURGS (Black).—Cocks.—1, N. Marlor, Denton, Manchester. 2, H. Beldon. 3, Rev. W. Serjeantson, *hc*, Duke of Sutherland, Trenham Hall, Stoke-on-Trent; Rev. W. Serjeantson.

HAMBURGS (Black).—Hens or Pullets.—1, H. Beldon. 2, Rev. W. Serjeantson. 3, S. Shaw. *hc*, J. Moore, Bingley.

HAMBURGS (Golden-pencilled).—Cocks.—1, Duke of Sutherland. 2, J. Holt, Middleton. 3, O. Bloodworth, Cheltenham. *c*, J. Preston.

HAMBURGS (Golden-pencilled).—Hens or Pullets.—1, W. R. Park, Melrose. 2 and 3, H. Beldon. *hc*, W. R. Park; C. Bloodworth.

HAMBURGS (Silver-pencilled).—Cocks.—Cup, H. Beldon. 2, J. Robinson. 3, T. Hanson, Keighley. *hc*, Duke of Sutherland.

HAMBURGS (Silver-pencilled).—Hens or Pullets.—1, Duke of Sutherland. 2, J. Robinson. 3, H. Beldon.

HAMBURGS (Golden-spangled).—Cocks.—1, 3, and *c*, W. A. Hyde, Hurst, Ashton-under-Lyne. 2, Duke of Sutherland. 4, Burch & Boulter. *hc*, Duke of Sutherland; J. Buckley.

HAMBURGS (Golden-spangled).—Hens or Pullets.—1, Countess of Tankerville. 2 and 3, J. Buckley. 4, W. A. Hyde. *hc*, E. Brierley; N. Marlor. *c*, E. Brierley, Dever, Sutherland.

HAMBURGS (Silver-spangled).—Cocks.—1 and Cup, H. Beldon. 2, J. Fielding, Newchurch. 3, G. & J. Duckworth, Church. 4, W. McMillon, Glossop. *hc*, Rev. H. Buckston, Hope, Sheffield; Ashton & Booth, Broadbottom, Mottram. *c*, W. R. Park, Melrose.

HAMBURGS (Silver-spangled).—Hens or Pullets.—1, Duke of Sutherland. 2 and 4, H. Beldon. 3, Ashton & Booth. The class commended.

PALES (Black with White Crests).—Cocks.—1, S. Shaw. 2, H. Beldon. *hc*, T. F. Edwards, Lyndhurst; P. Unsworth. *c*, T. P. Edwards.

POLISH (Black with White Crests).—Hens or Pullets.—1 and 2, S. Shaw. *hc*, Mrs. Procter, Hull; T. P. Edwards (2).

POLISH (Golden).—Cocks.—1 and Cup, G. C. Adkins, The Lightwoods, Birmingham. 2, P. Unsworth. *hc*, H. Beldon.

POLISH (Golden).—Hens or Pullets.—1 and 2, H. Beldon. *hc*, Mrs. Potter, East Court, Cheltenham; P. Unsworth.

POLISH (Silver).—Cocks.—1 and 2, G. C. Adkins.

POLISH (Silver).—Hens or Pullets.—1 and *hc* (2), G. C. Adkins. 2, H. Beldon.

ANY OTHER VARIETY.—1, Rev. N. J. Ridley, Newbury. 2, R. S. S. Woodgate, Pembury, Tunbridge Wells. 3, A. Da by, Bridgnorth. *hc*, Rev. J. N. H. Thorp, Macclesfield; C. F. Montrose, Herschells, Slough. *c*, W. Simpson, jun., West Farms, New York, America; Dowager Countess of Aylesford, The Bury, Leamington; Countess of Darlington; G. Burnell, *c*, E. Clavey, Burton-on-Trent.

GAME (Black-breasted Reds).—Hens.—1, W. J. Pope. 2, C. W. Brierley, Middleton. 3, E. Aykroyd. *hc*, S. Pallets.

GAME (Black-breasted Reds).—Pullets.—1, W. E. Oakeley. 2, W. J. Pope. 3, E. Aykroyd. 4, G. E. Peach, Wellington, Salop. 5, J. Forsyth, *hc*, D. Harley, Rose Bank, Edinburgh; W. J. Pope (2); J. Fletcher; W. E. Oakeley; T. P. Lyon, Liverpool.

GAME (Brown and other Reds, except Black-breasted).—Cocks.—1, T. Mason, Green Ayre, Lancaster. 2, W. H. L. Clare, Twycross, Atherstone. 3, T. Burgess, Burleydam, Whitechurch. 4, J. Wood, Wigan. 5, E. Aykroyd.

GAME (Brown and other Reds, except Black-breasted).—Cockerels.—1, S. Mathew. 2, T. Mason, Green Ayre, Lancaster. 3, J. Fletcher. 4, C. W. Brierley. 5, J. Cook, Worcester. *hc*, W. Dunning, Newport, Salop; E. Mann, Stand, Pilkington; C. Minors, Sudbury.

GAME (Brown and other Reds, except Black-breasted).—Hens.—1 and 2, T. Burgess, Whitechurch. 3, W. Boulton, Dalton-in-Furness. 4, C. W. Brierley.

GAME (Brown and other Reds, except Black-breasted).—Pullets.—1, S. Mathew. 2, W. Boulton. 3, T. Burgess. 4, E. Davis, Worcester. 5, T. Mason, Green Ayre. *hc*, J. Wood, Wigan; C. W. Brierley; E. Aykroyd; J. Wood.

GAME (Duckwings and other Greys and Blues).—Cocks.—1 and Cup, S. Mathew. 2, E. C. Gilbert, Penkridge. 3, D. Harley. 4, J. Goodwin, Liverpool. *hc*, C. Chaloner.

GAME (Duckwings and other Greys and Blues).—Cockerels.—1, J. Mason, St. John's, Worcester. 2, S. Mathew. 3, Capt. Beck. 4, C. Chaloner. *c*, G. Bagnall; B. Jarvis, Mansfield; J. Fletcher.

GAME (Duckwings and other Greys and Blues).—Hens.—1, J. Goodwin. 2, S. Mathew. 3, D. Harley.

GAME (Duckwings and other Greys and Blues).—Pullets.—1, J. Douglas, Clumber, Worsnop. 2, E. Aykroyd. 3, E. Clavey, Burton-on-Trent. *c*, E. Adam, W. Dunning.

GAME (Black and Brassy-winged, except Greys).—Cocks.—1, 2, and Cup, C. F. Montrose.

GAME (Black and Brassy-winged, except Greys).—Hens or Pullets.—1, G. F. Ward, Wrenbury. 2 and *c*, E. Kendrick, jun., Lichfield.

GAME (White and Piles).—Cocks.—1, C. W. Brierley. 2, W. H. L. Clare, Twycross, Atherstone. 3, W. Dunning. 4, H. Salter, Tolleshunt D'Arcy, Kelvedon.

GAME (White or Piles).—Hens or Pullets.—1, C. W. Brierley. 2, W. Dunning. 3, C. F. Montrose.

BANTAMS (Gold or Silver-laced).—1 and 3, M. Leno. 2, U. Spary, Markyate Street, Dunstable. *c*, U. Spary; M. Leno.

BANTAMS (White, Clean-legged).—1 and 2, Rev. F. Tearle. *hc*, G. Palfreyman, jun.

BANTAMS (Black, Clean-legged).—1, C. F. Herrieff, Banbury. 2, E. Cambridge, Bletchley. 3 and *hc*, W. A. Taylor. 4, R. H. Ashton. *c*, J. H. Bradwell, Southwell.

BANTAMS (Any other variety except Game).—1, Rev. W. Serjeantson. 2, Mrs. Woodcock.

GAME BANTAMS (Black-breasted Reds).—1, Cup, and 5, H. Shumack, Southwell. 2, G. Maples, jun., Wavertree, Liverpool. 3, G. Hall, Kendal. 4, W. Straw, Farnsfield, Southwell. *hc*, T. Sharples, Rawtenstall; J. W. Morris, Rochdale.

GAME BANTAMS (Brown and other Reds, except Black-breasted).—1, S. Beighton, Farnsfield, Southwell. 2, E. Newbitt, Epworth. *hc*, G. F. Ward, Wrenbury. *c*, W. Dunning.

GAME BANTAMS (Any other variety).—1, H. Shumack. 2, R. Brownlie, Towns end, Kircaldy. 3, E. Newbitt.

GAME BANTAMS (Black-breasted and other Reds).—Cocks.—1, G. Hall, Kendal. 2, H. Shumack. 3, A. Lockwood, Carno. 4, T. Sharples. 5, E. Newbitt. *hc*, Capt. Wetherall, Loddington, Kettering; T. Sharples. *c*, W. C. Phillips, Worcester.

GAME BANTAMS (Any other variety).—Cocks.—1 and 3, W. L. Mason, Chesterfield. 2, G. Hall.

DUCKS (White Aylesbury).—1 and 4, J. K. Fowler, Aylesbury. 2, E. Leech, Rochdale. 3, Lady Gwydyr.

DUCKS (Rouen).—1, Cup, 2, and 3, R. Gladstone, jun., Courthey, Liverpool. 4, T. Slater, jun., Whitefield, Manchester. 5, S. Barn, Whitby. 6, P. Unsworth. *hc*, S. Shaw, Standland, Halifax; T. Statter, jun. (2); T. Wakefield, Golborne; W. Evans, Prescot; R. Gladstone, jun. *c*, R. Gladstone, jun.; Mrs. E. Wheatley; W. Evans.

DUCKS (Black East Indian).—1, Cup, and 3, J. J. Malden, Biggleswade. 2, G. S. Sainsbury, Devizes. 4, F. Pittis, jun., Newport, Isle of Wight. *hc*, Rev. W. Serjeantson; Rev. J. Richardson; S. Barn (2); G. S. Sainsbury (2). *c*, Mrs. Harne, Fordington, Dorchester.

M. DARN.—1, H. Maplebeck, Birmingham. 2, R. Wilkinson, Guildford.

CAROLINA.—1 and Cup, Miss E. Brown, Chard. 2, R. Gladstone, jun. *hc*, H. Maplebeck; J. Watts, King's Heath, Birmingham; R. Wilkinson.

CALL.—1, R. Gladstone, jun. 2, T. Wakefield.

DUCKS OR ORNAMENTAL WATERFOWL.—1 and 2, M. Leno, Markyate Street, Dunstable. *hc*, R. Wilkinson. 3, H. Leno; H. B. Smith, Preston.

GESE (White).—1 and *hc*, J. K. Fowler. 2, E. Leech.

GESE (White).—Goslings.—1 and *hc*, J. K. Fowler. 2, J. Lycett Stafford.

GEESSE (Grey and Mottled).—1 and hc, J. K. Fowler. 2, E. Leech.
GEESSE (Grey and Mottled).—Young.—1, J. K. Fowler. 2, J. Lyckett, Stafford.
hc, J. K. Fowler; Col. Lane (2); T. Watson, Colleshill.
TURKEYS.—Cocks.—1, F. Lythall, Leamington. 2, W. Simpson, jun. *hc*,
 Lieut.-Col. Harrison, Stafford; J. Coxon, Freeton, Lichfield; F. E. Richardson,
 Bramshall, Uttoxeter; H. J. Gunnell, Milton, Cambridge. *c*, Lady D. H.
 W. Fitzwilliam, Wellingborough.
TURKEYS.—Cockerels.—1 and 2, F. Lythall. *hc*, F. Lythall; T. Watson; W.
 Wykes, Wolvey, Hinckley; Mrs. J. Nutt, Fillingale, Coventry; E. Leech; W.
 Wykes.
TURKEYS.—Hens.—1, F. E. Richardson. 2, Mrs. J. Nutt.
TURKEYS.—Poults.—1, F. Lythall. 2, E. Leech. *hc*, H. J. Gunnell; E. Ken-
 drick, jun.; J. Nutt; W. Wykes (2); E. Arnold.

PIGEONS.

TUMBLERS.—Almond.—1 and 2, R. Fulton. 3, J. Ford, London. *hc*, R.
 Fulton. *c*, J. Ford.
CARRIERS (Black).—Cocks.—1 and 2, R. Fulton. *c*, W. Siddons, sen. Aston,
 Birmingham; R. Fulton. *Hens.*—1, H. M. Maynard, Ryde, Isle of Wight. 2,
 R. Fulton. *hc*, F. Smith, Selly Oak, Birmingham; R. Fulton. *c*, W. Siddons,
 sen., Birmingham.
CARRIERS (Dun).—Cocks.—1, R. Fulton. 2 and *hc*, W. Siddons, sen. *c*, H.
 Yardley. *Hens.*—1, J. C. Ord, London. 2, H. M. Maynard, *c*, J. C. Ord; H.
 Mapplebeck, Moseley, Birmingham.
CARRIERS (Blue).—Cocks.—1 and 2, W. Siddons, sen. *hc*, R. Fulton.
 J. Watts. *Hens.*—1, J. C. Ord. 2, W. Siddons, sen. *hc*, R. Fulton.
c, J. Watts.
CARRIERS (Black).—1, F. Smith. 2 and c (2), W. Siddons, sen.
CARRIERS (Any other colour).—1 and c, W. Siddons, sen. 2, F. Smith.
POUTERS (Red).—Cocks.—1, R. Fulton. 2, W. R. Rose, Kettering. *Hens.*—
 1 and 2, R. Fulton. *c*, W. R. Rose.
POUTERS (Blue).—Cocks.—1, Rev. C. C. Ewbank, Biggleswade. 2, R. Fulton.
Hens.—1, R. Fulton. 2, Rev. C. C. Ewbank, *c*, W. Harvey.
POUTERS (Black).—Cocks.—1, Rev. C. C. Ewbank. 2, R. Fulton. *Hens.*—
 1 and 2, W. R. Rose. *c*, R. Cant, Brompton Road, London; Rev. C. C. Ewbank.
POUTERS (White).—Cocks.—1 and *hc*, W. R. Rose. 2, R. Fulton. *c*, Mrs.
 Ladd, Calne. *Hens.*—1, R. Fulton. 2, W. R. Rose. *c*, Mrs. Ladd (3); H. Pratt,
 Loozells, Birmingham.
POUTERS (Any other colour).—Cocks.—1, R. Fulton. 2, Rev. C. C. Ewbank.
Hens.—1 and 2, R. Fulton.
BARBS (Black).—1, H. M. Maynard. 2 and hc, R. Fulton. c, H. M. Maynard;
H. Mapplebeck.
BARBS (Any other colour).—1, R. Fulton. 2, H. Yardley. c, Mrs. Smith,
Sutton Maddock, Shifnal.
BARBS (Young).—1, F. Smith. 2, H. M. Maynard. hc, R. W. Richardson,
Beverly. c, J. Ford, 3, Fence, Burton-on-Trent.
BALLS OR BEARDS.—1, W. C. Oates, 2, W. H. C. Oates,
Besthorpe, Newark. hc, J. Fielding, jun., Rochdale (2); J. Percivall, Peckham
(2); R. Fulton; W. Choyce.
TUMBLERS (Short-faced).—1 and hc, R. Fulton. 2, R. Cant. hc, J. Ford.
TUMBLERS (Long-muffed).—1, J. W. Ludlow, Birmingham. 2, J. W. Edge,
Tyburn, Edington. hc, J. W. Ludlow; H. Yardley.
TUMBLERS (Any other variety).—1, W. Harvey. 2, J. Percivall. vhc, J. W.
Edge. hc, J. Watts.
RUNTS.—1 and hc, T. D. Green, Saffron Walden. 2, H. Yardley.
JACOBINS (Red or Yellow).—1 and 2, R. Fulton. hc, J. Thompson; W. E.
Easten, Hull; S. Shaw. c, W. E. Easten; H. M. Maynard.
JACOBINS (Any other colour).—1, R. Fulton. 2, J. B. Bowden. hc, J. Thomp-
son, Bingley. hc, R. Fulton.
FANTAILS (White).—1, H. M. Maynard. 2, W. Choyce. 3, Rev. W. Serjeant-
son. hc, J. F. Loversidge; H. Yardley; Rev. W. Serjeantson. c, Rev. W.
Serjeantson; W. Choyce; J. F. Loversidge.
FANTAILS (Any other colour).—1 and 2, H. Yardley. vhc, W. Choyce. c, J.
W. Edge, Tyburn, Edington.
TRUMPETERS (Mottled).—1 and 2, R. Fulton. hc, J. Bailey, jun., London (2).
TRUMPETERS (Any other colour).—1, R. Fulton. 2, W. H. C. Oates, Besthorpe,
Newark.
OWLS (Foreign).—1 and 2, J. Fielding, jun.
OWLS (English).—1, J. W. Edge, Tyburn, Edington. 2, W. Binns, Pudsey.
hc, S. A. Cooper, Walsall; W. Tidd, Edington, Birmingham; W. Gamon,
Chester (2). c, S. A. Cooper.
NUBS.—1, R. Fulton. 2, R. W. Richardson. 3, H. Belden, Goitstock, Bingley.
hc, J. B. Bowden, Blackburn; H. Yardley; J. Watts, Birmingham.
TURBITS (Red or Yellow).—1, O. E. Cresswell. 2, R. Fulton. hc, S. Shaw;
J. Fielding, jun.
TURBITS (Any other colour).—1, S. Shaw. 2, L. H. Ricketts, Banwell. hc, J.
Peace, Burton-on-Trent; J. Fielding, jun.; S. Shaw.
DRAGONS (Blue).—1, W. Gamon. 2, H. R. Wright, Birmingham. hc, J.
Watts, Hazelwell Hall, Birmingham; W. E. Easten; W. Gamon; F. Graham
(2); H. Yardley.
DRAGONS (Red or Yellow).—1 and 2, F. Graham. hc, J. Thompson; R.
Fulton; J. Watts; W. H. Mitchell.
DRAGONS (Silver).—1 and 2, F. Graham.
DRAGONS (Any other colour).—1, F. Graham. 2, R. Fulton. hc, W. H.
Mitchell; R. W. Richardson.
MAGPIES.—1, J. B. Bowden. 2, J. Watts. vhc, H. Yardley. hc, Mrs. Daw-
son (2).
ANTWERPS (Silver Duns).—1, W. Gamon. 2, H. R. Wright. hc, H. Yardley;
W. Van Wat (2); H. P. Ryland, Edington; H. R. Wright (2); J. W. Ludlow.
ANTWERPS (Blue).—1, W. Gamon. 2, W. Bourne, Shaw Heath. hc, W. H.
Mitchell; J. Watts.
ANTWERPS (Red-chekquered).—1 and 2, H. R. Wright. hc, W. Gamon (2); W.
Bourne.
ANTWERPS (Blue-chekquered).—1 and 2, J. W. Ludlow. hc, W. Bourne; W.
Gamon; J. W. Ludlow.
ANTWERPS (White).—1 and 3, J. W. Ludlow. 2, W. Bourne. hc, W. Van
Wart; W. Binns.
ARCHANGELS.—1, H. Yardley. 2, W. Harvey. hc, J. Thompson; H. Yardley.
SWALLOWS.—1, H. Belden. 2, H. Yardley. hc, Mrs. Dawson; W. Choyce.
c, J. Watts.
ANY OTHER NEW OR DISTINCT VARIETY.—1 and hc, J. W. Ludlow. Equal 1,
H. Yardley. 2, Mrs. Dawson. Equal 2, H. Belden. 3 and vhc, J. B. Bowden.
Equal 3, J. W. Edge. c, H. Yardley; J. Thompson.

JUDGES.—Poultry: Mr. J. Bailey, Mount Street, Grosvenor
 Square, London; Mr. E. Hewitt, Eden Cottage, Sparkbrook,
 Birmingham; Rev. G. F. Hodson, North Petherton, Bridge-
 water; Mr. J. Dixon, North Park, Clayton, Bradford; Mr. J.
 H. Smith, Skelton Grange, York; Mr. E. Lowe, Comberford, Tam-
 worth; Mr. H. Mapplebeck, Woodfield, Moseley, Birmingham.
Pigeons: Mr. H. Weir, 9, Lyndhurst Road, Peckham, London;
 Mr. E. L. Corker, Croydon; Mr. F. Esquilant, 4, Effra Road,
 Brixton, S.; Mr. T. J. Charlton, 62, Trafalgar Street, Bradford,
 Yorkshire.

EXTRA PRIZE FOR BLACK EAST INDIAN DUCKS.—Permit me to
 thank the following gentlemen for their promised subscriptions
 towards a piece of plate for Black East Indian Ducks, Class 93,

at the Birmingham Show:—F. Pittis, Esq., jun., Isle of Wight,
 £1 ls.; Mrs. Hayne, Dorchester, 10s. 6d.; Rev. W. Serjeantson,
 Shrewsbury, 10s. 6d.; Rev. John Richardson, Sandy, 10s. 6d.;
 W. E. George, Esq., Bristol, 10s. 6d.; R. S. S. Woodgate, Esq.,
 Tonbridge Wells, 10s. 6d.; J. K. Fowler, Esq., Aylesbury, 10s. 6d.;
 G. S. Sainsbury, Esq., Devizes, 10s. 6d. These, with my own
 half-guinea, make up the five-guinea piece of plate, being, with
 the first prize, £8 5s. for the winner.—SAML. BURN.

CAMBRIDGE POULTRY SHOW.

THIS was held on November 27th and 28th, in the Corn Ex-
 change, which is well suited for the purpose. Billett's pens
 were used, and many of the members of the Committee being
 true fanciers, the birds were well attended to, and all regulations
 efficiently carried out. Many of the classes were very heavy,
 and the quality in most cases was high.

Adult *Dorkings* did not compare well with the chickens which
 won the cup. Buff *Cochins* were very good; the cup-winners
 were adults, leaving little to be desired. In the Variety class
 of *Cochins* Partridge stood first, with Whites second, but among
 the chickens the third prize was withheld through want of merit.
 Light *Brahmas*, any age, were good, although some of the cocks
 were slightly tinged with yellow. The corresponding class of
 the Dark variety contained some excellent pens, and the cup was
 awarded there. *Brahma* chickens of any variety were very
 strong. The first prize was awarded to a handsome pen of
 Dark, and the second and third to Light. Some of the *Game*
 were too coarse, but the winners in all classes were very good.
 In the class for Red both prize birds were of the Brown
 variety, and the run for first honours was very close. The
 third prize went to a very firm-handling Black Red. Duck-
 wings carried off the cup, the pair being a perfect picture.
 Second came Piles, scarcely forward in feather, but an excellent
 pair; the third were Duckwings, in which the only fault was
 that the hackle of the cock was rather heavily marked. For
 Game chickens of any colour, Black Red in full bloom were first
 and Brown Reds second, the latter pen being of rare quality but
 late in feather. Golden-spangled *Hamburghs* were fair, the first
 and second prizes going to pairs composed of cockerel and hen,
 and the third to young birds. Of Silver-spangled *Hamburghs*
 only the winners were noteworthy, though the cup was awarded
 to a splendid pen of chickens. Gold-pencilled were poor, with
 the exception of the winners, though these had the proper style
 of marking. Silver-pencilled were good, but not in numbers.
 Several pens of *Hamburghs* were empty. Of *Spanish* there were
 only three pens; Messrs. Nicholls's were very fine. *French*
Fowls were a very good class; *Crève-Cœurs* of great merit were
 first, *Houdans* second, *La Flèche* third. In the Variety class
 Silver Poland chickens were first, and adult birds third, while
 the second prize was awarded to Malays. Red Game *Bantams*
 were very numerous, but many of the birds were poor, heavy
 tails in cocks and pencilled wings in hens prevailing, though the
 winners were of fair quality. The first prize went to a grand-
 styled pair of birds, the only fault in which was a slight dullness
 of the bar on the cock's wing; second came Brown Reds, third
 Black Reds. For Game *Bantams* of any other colour first came a
 capital pen of Duckwings, and second and third very good Piles.
 Black *Bantams* were a capital class, the cup for the best pen
 being awarded here. The first prize in the Variety class went
 to Pekins, the second to White, and the third to Japanese
 Bouted.

Both the Selling classes were very large, and there were many
 cheap birds, the prizes in cocks going to Pile Game, Partridge
 Cochins, and Light *Brahma*; while those for hens or Ducks went
 to Aylesbury Ducks, Black Red Game pullets, and Cinnamon
 Cochins.

One class for *Ducks* completed the poultry section. The first
 and cup went to Rouens, the second to Aylesburys, and the third
 to Mandarins.

The *Pigeon* classes contained some good birds, the Carriers
 being foremost in that respect, and winning no easy affair. The
 cup was awarded to a splendid Black cock. In hens the contest
 was very close between a capital Black shown by Mr. Massey
 and two Duns by Mr. Metcalfe, all these birds being of the
 highest merit. Young Carriers were also a very good class, the
 winners being all Blacks, the first and second hens, and the
 third to all appearance a cock of great length of face and strong
 beak, the only failing being in beak-wattle, which was a little
 flat. In Pouter cocks a grand Blue of this year took the first
 prize and cup; Whites were second and third. All the prizes
 for the hens went to White. Among Almond Tumblers first
 came a cock, good in head, beak, and eye, and well-broken in
 feather, the second and third being hens, between which it was
 no doubt difficult to decide. In the class for Any other variety
 of Tumblers the prizes were evidently awarded to head, beak,
 and eye rather than feather, a Red whole-feather being awarded
 the first prize, an Agate the second, and a Kite the third. Barbs
 were young and smart, the winners were Blacks. Jacobins were
 a very good class, and the first-prize pair Yellow, the second

Red, and the third White. Fantails were good, but not numerous, and the Turbitts also good. In this class Blacks were first, Silvers second, and Yellows third. In Dragoons there was a heavy competition, the first-prize Silvers, which have capital black bars, being well worthy of the cup; second came a sound-coloured pair of Yellows, and third Reds. Antwerps were also numerous, the first being Short-faced Red Chequers, the second Long-faced Blue Chequered, and the third Duns. This class might be divided into three, one for Short-faces, with great advantage to the entries. The Variety class contained some good birds; the first were White foreign Owls, the second Ice Pigeons, and the third Red Pigmy Pouters.

Lop-eared Rabbits were a grand lot, and measured well, but although they left little to be desired, the cup was awarded to a Silver-Grey doe, such as we have never seen before; this Rabbit was very large, with heavy dewlap; the head, ears, and feet being quite equal in colour to the body, which was perfect in shade, and the condition faultless. The second-prize in the latter class went to a good Himalayan, and the third to a very good Angora. The Lop-ears were first a Sooty Fawn buck, in high condition, in ear $22\frac{1}{2}$ by 5 inches; second, a Blue buck, $22\frac{1}{2}$ by $4\frac{1}{2}$; third, a Fawn doe, 22 by $4\frac{1}{2}$; most of the others measuring closely upon the above lengths. Many prizes were won by local exhibitors in several of the classes.

DORKINGS.—1. Henry Lingwood, Barking, Needham Market. 2. Rev. E. Bartum, Great Berkhamstead. Local Cup and 2. W. King, jun., Botolph Claydon. 3. J. Long, Forest Hill. 4. Mr. T. Turner, Marden, Hereford. 5. F. Parlett, Mrs. F. Stevens, Abbots Hipton Hall, Hants; W. Tippler, Ipswich.

COCHIN-CHINA.—Cinnamon or Buff.—Cup and 1. Henry Lingwood, 2. H. Tomlinson, Graveley Hill, Birmingham. 3. H. Lloyd, jun., Handsworth. Local Cup. W. Mansfield, Cambridge. C. W. H. James, Ditton Rectory.

COCHIN-CHINA.—Any Colour.—Chickens.—1. Henry Lingwood (Buff). 2. Rev. R. Fielden, Muggington Rectory (Partridge).

BRAMA POOTRA.—Light.—1. T. A. Dean, Marden, Hereford. 2. H. M. Maynard, Holmewood, Isle of Wight. 3. Mrs. T. Turner, Avon, Ringwood, hc, Mrs. T. Turner. 4. P. Haines, Palgrave; Horace Lingwood, Cretingham.

BRAMA POOTRA.—Dark.—Cup and 1. T. F. Ansell, Cowley Mount, St. Helens. 2. Dr. Holmes, Chesterfield. 3. Horace Lingwood. Local Cup. F. W. Bell, Little Shelford. hc, W. Whiteley, Sheffield; J. Watts, Birmingham. C. W. Mansfield.

BRAMA POOTRA.—Any variety.—1. Horace Lingwood. 2. Mrs. T. Turner (Light). 3. J. Long, Forest Hill. hc, Mrs. T. Turner (Light); J. T. Hinks (Light); G. Manders, Walthamstow (Dark); T. Spurr; W. Whiteley; W. Birch, Coventry (Dark); W. Mansfield (Dark) (2). c. P. Haines (Light).

GAME.—Black or Brown Reds.—1. S. Matthew, Stowmarket. 2. H. E. Martin. 3. R. Hall, Cambridge. hc, R. Hall (2). H. Winn, Worcester.

GAME.—Any other variety.—Cup and 1. S. Matthew (Duckwing). 2. H. C. J. W. Mason. 3. S. Matthew. 4. H. F. Martin (Brown Reds). 5. S. Field. hc, G. Hawkins; R. Hall; Capt. Barnett, Biggleswade.

HAMBURGS.—Gold-spangled.—1. T. Boulton, Stoke-on-Trent. 2. L. Wren, Lowestoft. 3. T. May, Wolverhampton. hc, R. H. Ashton, Mottram; L. Wren. Silver-spangled.—Cup and 1. Ashton & Booth, Mottram. 2. J. Freeman, West Bromwich. Local cup, F. Hills, Ely.

LANDBURGERS.—Gold-pencilled.—1. W. Speakman, Nantwich. 2. C. J. N. Row. 3. Capt. E. G. Coleridge. hc, J. Walker, Newark; C. W. Gibbs, Sutton Bridge; W. K. Tickner. Silver-pencilled.—1. H. & A. Gill. 2. T. Hanson, Keighley.

SPANISH.—1. Nicholls Bros, Camberwell. 2. H. Griis. 3. Mrs. F. Stephens.

FRENCH FOWLS.—1. 2. and Local Cup. W. Cutlack, jun. (Crève-Cœur and Houdans). 3. Rev. N. J. Ridley (La Fleche). hc, C. A. Cobbe, Banbury (Crève-Cœur). hc, Rev. T. C. Beasley, Saffron Walden; J. Long; W. Massey, Spalding (Crève-Cœur).

GAME BANTAMS.—Black or Brown Reds.—1. A. Smith, Halifax. 2. G. B. Morling, King's Lynn. 3. O. E. Cresswell, Early Wood, Bagshot. hc, W. B. Jeffries, Ipswich; J. Long; Bellingham & Gill, Burnley; S. Salter, Oxford. c. S. Day, Milton, Cambs; A. Ashley, Worcester.

GAME BANTAMS.—Any other variety.—1. W. Adams. 2 and 3. Bellingham and Gill (Pile). c. J. Watts.

BANTAMS.—Black.—Cup and Medal. R. H. Ashton. 2. G. B. Francis, Romford. 3. Rev. F. Tearle, Gazeley Vicarage. Local Cup. C. Reed, Cambridge. hc, W. H. Robinson, Keighley; H. M. Maynard; J. Watts; R. Wingfield.

BANTAMS.—Any other variety.—1. B. S. Lowndes, Stony Stratford (Pekin). 2. Rev. F. Tearle. 3. J. Watts. hc, W. Stringfield, Lowestoft (Sebright). c. C. Reed (White).

ANY OTHER VARIETY EXCEPT BANTAMS.—1 and 3. W. K. Patrick, West Winch (Fish). 2. Rev. N. J. Ridley, Newbury (Malay). hc, Miss Mill, Rickmansworth (White Leghorns).

SELLING CLASS—Cock or Drake.—1. H. C. F. W. G. Mason, Driblington. 2. S. Salter (Partridge Cochins). 3. D. Young, Leamington (Light Brahma). hc, J. Walker (Houdan and Hamburg); T. F. Upsher, Sutton, Isle of Ely (Rouen); A. Darby, Bridgenorth (Rouen); Capt. Barnett (Game); Mrs. F. Stephens (Dorking); C. Bayes (White Dorking); H. Dowsett (Light Brahma); A. C. Swain (Black Red Game); W. Tippler (Rouen). c. J. K. Jun. (Aylesbury); W. Cutlack, jun. (Houdan); Miss M. E. Campain (Aylesbury); J. Hedges (Partridge Cochins); W. Speakman (Black Red Game); W. Tippler (Coloured Dorking); A. Hall (Dark Brahma).

SELLING CLASS—Hens, Pullets, or Ducks.—1. J. Hedges (Aylesbury). 2. A. C. Swain (Black Red Game). 3. W. H. James (Buff Cochins). hc, H. S. Woodgate, Fembury, Tunbridge Wells (White Cochins); Rev. F. Tearle (Cuckoo Dorkings); T. F. Upsher (Rouen); W. Cutlack, jun. (Houdan); W. E. Patrick (Polish); J. Foster, Kettering (Black Hamburgs); A. Darby (Rouen); H. M. Maynard (Light Brahma and Rouen); Capt. Barnett (East Indian Ducks); W. Mansfield (Dark Brahma); E. Shaw, Plas Wylmot, Oswest y; C. Bayes (White Dorking); H. Dowsett (Light Brahma). c. Major F. Barlow (Brahma and Houdan); W. H. James (Cinnamon Cochins); J. S. Pearson, Great Melton (Buff Cochins); W. Birch (White Cochins); W. Mansfield (Dark Brahma); R. E. Parker (Gold-pencilled Hamburgs).

DUCKS.—Cup, 1. and Local Cup. T. F. Upsher. 2. J. Hedges. 3. G. S. Hall. hc, Mr. J. Willmot; Miss M. E. Campain; F. Richardson, Chatteris. c. J. King, jun.; I. H. Wilkinson; C. Churnall, Witleford (2); U. Marshall.

PIG PONS.

CARRIERS.—Cocks.—Cup, 1. and hc, R. Cant, Brompton Road, London. 2. H. M. Maynard. 3. W. Massey. hc, W. G. Hammock, Ilford; H. M. Maynard; L. Wren. c. W. G. Hammock.

CARRIERS.—Hens.—1 and hc, W. Massey. 2 and 3. F. W. Metcalfe. hc, H. M. Maynard; F. W. Metcalfe (2); J. Baker, Spring Grove (2). c. S. D. Baddoley, Hereford; W. G. Hammock.

CARRIERS.—Young Cocks.—1 and 2. W. Bulmer, Spalding. 3. F. W. Metcalfe. hc, W. Minson. 4. Ives. F. W. Metcalfe. hc, Master H. Turner, Ipswich; W. Bulmer (2). c. Mrs. Ladd, Calne.

POUTERS.—Cocks.—Cup and 1. W. R. Rose. 2. R. Ashton. 3. J. E. Palmer. hc, R. Cant. W. R. Rose; W. Stiles, Kettering. H. Yardley, Birmingham; F. W. Metcalfe.

POUTERS.—Hens.—1. W. R. Rose. 2. Rev. C. C. Ewbank, Langford Vicarage. 3. Mrs. Ladd. hc, J. E. Palmer; R. Ashton; Mrs. Ladd.

TUMBLERS.—Almond.—Cup and 1. H. Hills. 2 and 3. J. Baker. hc, J. T. Hicks. c. H. Yardley. Any other variety.—1. H. Hills (Red). 2. H. Yardley.

3 and hc, G. Cresswell.

BARDS.—1 and 3. H. M. Maynard. 2. H. Yardley. hc, J. H. Watkins; G. Cresswell; J. Watts. c. J. Long.

JACOBINS.—1. A. A. Vander Meersch, Tooting. 2. G. South. 3. J. Baker. hc, A. A. Vander Meersch; H. M. Maynard; E. Robinson, Kettering. c. A. A. Vander Meersch.

FANTAILS.—1. H. M. Maynard. 2. J. Walker. 3. J. F. Loversidge, Newark. hc, A. A. Vander Meersch. c. G. E. Cresswell.

TURKEYS.—1. S. Salter. 2. H. Yardley. 3. A. A. Vander Meersch. hc, O. E. Cresswell; G. Cresswell. c. G. S. Hall.

DRAGONS.—Cup, 1. and 3. G. Sou h London. 2. A. W. Wren. c. G. Cresswell; H. Allsop; W. Minson; J. Watts.

ANTWERPS.—1. H. R. Wright, Birmingham. 2. A. R. Burnell. 3. J. W. Collin son Halifax. hc, F. W. Metcalfe; F. Manthorpe. c. R. Hall; H. Yardley; J. Baker.

ANY OTHER VARIETY.—Book. G. Cresswell. 2. J. Braid (Ice). 3. A. A. Vander Meersch. hc, J. H. Watkins; A. A. Vander Meersch; J. Watts; J. Baker (White Trumpeters). c. J. Robertshaw, Thornton, Bradford; J. S. Price; G. S. Hall.

SELLING CLASS.—1 and 2. L. Watkin, Northampton (White Pouters). 3. S. Salter. hc, J. E. Palmer, Peterborough (Black Carrier and Silver Owls); J. H. Watkins (Carrier); G. C. Livett, Cambridge (Carriers); J. Long; W. W. Haines (White Pouters); H. B. Massey (Black Carriers); G. Cresswell (White Jacobins).

RABBITS.—Lop-eared.—1. J. Cranch, St. John's Wood. 2. F. Banks, London. 3. Shaw & Allison, Sheffield. hc, J. E. Palmer; F. Banks; A. H. Easton, Hull; T. Buckland; J. T. Hinks, Leicester; W. Canner, Leicester. Any other variety.—Cup and 1. A. B. Simpson (Silver-Grey). 2. S. G. Hindson, Hull (Himalayan). hc, A. H. Easton (Silver-Grey); W. Mayell, Tolleshunt D'Arcey (Angora). c. A. H. Easton (Himalayan); E. S. Smith, Boston (Belgian Hare); W. Mayell (Silver-Grey).

The Judges advertised were Mr. Hewitt for poultry and Rabbits, and Mr. Tegetmeier for Pigeons; but on account of Mr. Hewitt's unfortunate accident, Mr. Hutton judged the poultry and Rabbits, and Mr. Tegetmeier the Pigeons.

OAKHAM POULTRY SHOW.

THIS Show, in connection with the Rutland Agricultural Show, was held at Oakham, on the 27th and 28th ult., in the new Poultry Hall, recently built for the purpose, well lighted, and in every way suitable. This, coupled with the excellent management of the Hon. Sec. and the indefatigable Steward, secured the best Show ever witnessed in Rutland.

The Pigeons were not numerous, but for quality far surpassed those at former Exhibitions. The only inferior classes were those confined to the county for a ten-guinea challenge cup, given by the Earl of Gainsborough; but the competition for a five-guinea cup, presented by the Marchioness of Huntley for the best pen of *Houdans* or *Crève-Cœurs*, brought together such a number of good birds that the Judges remarked they alone were worth going a journey to see. *Cochins*, *Dorkings*, and *Brahmas* were well represented. *Spanish* were nothing particular. *Hamburgs* were very good, the cup going to a grand pen of Golden-spangled. *Game* occupied seventy-seven pens, and included some remarkable birds. *White*, *Black*, and *Laced Bantams* were very light classes, but *Game Bantams* filled forty-five pens in the two classes, and contained some of the most beautiful specimens we have seen this season.

Turkeys, *Ducks*, and *Geese* were numerous, and included birds of great weight.

The following are the awards:—

DORKING.—Chickens.—Cup, C. White, Clipham, Oakham. hc, C. Speed. Extol (2). c. Countess of Lonsdale, Barleythorpe Hall.

GAME.—Chickens.—hc, A. Fludger, Ayston Hall; Countess of Lonsdale.

SPANISH, CRÈVE-CŒUR, HOUDAN, OR LA FLECHE.—Chickens.—hc, J. M. Wel lington, Oakham.

CROSS-BRED.—Chickens.—1. M. Kew, Market Overton, Oakham. 2. W. Hughes, Oakham. 3. J. Rawlings, Oakham. hc, M. Kew; J. Pollard, Oakham. c. F. E. Heycock, Braunston, Oakham; J. Rawlings; Rev. G. Skipworth, Oakham.

DUCKS.—Cross-bred or Common.—1. J. M. Wellington. 2. W. Hughes.

DORKING.—Coloured.—Cock.—Cup, J. Tyler, jun., Loughborough. 2. J. Longland, Grendon. 3. R. Pawly, Manton. hc, Mrs. Somerville, Chirk, N. Wales; C. Speed; J. Longland. c. W. B. Ebbson, Louth. Hens or Pullets.—1. L. Paton, Hillmore, Taunton. 2. Rev. E. Bartrum, Berkhamstead, Herts. 3. J. Stott, Healey, Rochdale. hc, E. Leech, Rochdale; A. Darby, Bridgenorth; W. H. Crewe, Etwell, Derby.

DORKING.—Silver-Grey.—Hens or Pullets.—1. O. E. Cresswell, Bagshot. 2. Marchioness of Exeter, Burghley Park, Stamford. hc, W. Fowler, Barrow, Oakham.

DORKING.—White.—Cock.—1. Mrs. F. Williams, Henlys, Berriew. 2. N. Whitcomb, Melton Mowray. hc, Marchioness of Exeter. Hens or Pullets.—1. O. E. Cresswell. 2. J. Mitchell, Moseley, Birmingham. hc, C. Speed; C. Bayes, Kettering.

SPANISH.—Black.—1. H. H. Cooper, Walsall. 2. J. Dixon, Cotgrave, Nottingham. 3. M. Brown, Melton Mowray. Chickens.—Cup and hc, J. F. Dixon. 2. W. R. Bull. 3. J. McConnell, Hereford.

COCHIN.—Cinnamon, Buff, or Partridge.—Cock.—1. H. Lloyd, jun., Handsworth. 2. Rev. R. Storey, Wensley, Bedale. hc, Capt. F. G. Coleridge, Wargrave. G. H. Finch, Burley-on-the-hill. Hens or Pullets.—Cup, H. Lloyd, jun. 2. Rev. R. Storey. hc, Capt. F. G. Coleridge. c. A. Darby; G. H. Finch; H. Yardley, Birmingham; T. M. Derry, Wisbeach.

COCHIN.—White or Black.—Cock.—1. R. S. S. Woodgate, Tunbridge Wells. 2. Rev. C. H. Lucas. hc, Mrs. A. Williamson, Leicester; Rev. C. H. Lucas; R. S. Woodgate. Hens or Pullets.—1. R. S. S. Woodgate. 2. H. Vanghan, Wolverhampton. hc, Mrs. A. Williamson; Lady G. Gordon, Oxten Longueville, Peterborough.

BRAMA POOTRA.—Cock.—1. J. M. Atkinson, Alford. 2. Mrs. A. Williamson. hc, Mrs. A. W. Buchan. Hens or Pullets.—1. Mrs. A. Williamson. 2. R. Caborn, Biggleswade. hc, R. B. Wood, Uttoxeter; Hon. C. Parker, Warrington; H. Chawner, jun., Uttoxeter.

BRAMA POOTRA.—Old or Young.—1. Lady Aveland, Stamford. 2. Mrs. Hill, Cheltenham. hc, W. O. Quibell, Newark; W. Dring, Faversham; Mrs. G. Adcock, Melton Mowray; R. B. Wood.

CRÈVE-CŒURS.—Old or Young.—Cup, R. B. Wood. 2. W. Dring. hc, R. Wood; E. Pritchard, Tettenhall.

HAMBURGS.—*Silver-spanied.*—1, J. B. Bly, Lowestoft. 2, J. Freeman, West Bromwich. *hc*, J. McConnell, Hereford. A. Goodrich, Northampton; W. Hughes. *Gold-spanied.*—Cup, W. K. Tickner, Ipswich, 2, J. Preston, Allerton, Bradford.

HAMBURGERS.—*Silver-pencilled.*—1, J. Preston. 2, J. McConnell. *Gold-pencilled.*—1, W. K. Tickner. 2, J. Preston. *hc*, R. S. S. Woodgate; Rev. G. Skipworth, Oakham. *c*, T. Wild, jun.

GAME.—*Red and other dark colours.*—*Cock.*—1, W. H. L. Clare, Twycross, Atherstone. 2, S. Mathew, Stowmarket. 3, J. Tyler, jun., Loughborough. *hc*, A. Fludger; J. Jones, Nantwich; G. Lucas, Mansfield; Lady Aveland; A. Peake, Oakham. 1, Whitaker, Melton Mowbray; J. Richardson, Loughborough. *c*, E. Winwood. 2, *or Pullets.*—Cup, J. Jekins, Ebbw. 2, A. Peake. 3, N. W. Church, Melton Mowbray. *hc*, W. H. L. Clare; G. Lucas, Mansfield. E. Winwood; F. H. Wright, Halifax; G. F. Ward, Wrenbury. *c*, J. Tyler, jun.; S. Mathew; C. Speed, Exton.

GAME.—*White, Piles, and Light Colours.*—*Cock.*—1, S. Mathew. 2, E. Winwood. 3, A. Peake. *hc*, W. H. L. Clare; G. Hibbitt, Exton; C. Chambers, Oakham; G. C. Trickett. *Hens or Pullets.*—1 and *c*, E. Winwood. 2, S. Mathew. 3, W. H. L. Clare.

BANTAMS.—*White, clean legs.*—Prize, Rev. F. Tearle, Gazeley Vicarage, Newmarket. *c*, Miss Finch, Burley-on-the-hill. *Black, clean legs.*—Prize, J. Waddington, Guiseley.

BANTAMS.—*Gold or Silver-laced.*—Cup and 2, M. Leno, Dunstable. *hc*, Miss Finch. *Any other Variety.*—Prize, Mrs. A. Woodcock.

GAMES BANTAMS.—*Cock.*—1, W. B. Jeffries, Ipswich. 2, W. Robinson, Whitehaven. 3, W. Shenton, Worcester. *hc*, M. Brown, Melton Mowbray; E. Winwood; H. F. Addie; H. C. Rogers, Newport Pagnall; A. Peake. *Hens or Pullets.*—Cup, W. B. Jeffries. 2, E. Winwood. 3, S. Stephens, jun., Stroud. *hc*, Lady Berners, Keythorpe Hall, Leicester; H. C. Rogers; Heppenstall and Otter, Newark; S. Deacon, jun., Wellingborough. *c*, C. F. Hore, Tonbridge; Lord Lowther, Oakham.

POLANDS.—1st, Withheld. 2, F. J. Barlow, Oakham.

ANY OTHER VARIETY.—1, R. S. S. Woodgate (White Silks). 2, J. Freeman (Black Hamburg).

TURKEY.—*Cock.*—1, F. Lythall, Leamington. 2, L. Patton. *hc*, M. Kew (2); E. Kendrick, jun., Lichfield; A. Provost, Thorney, Cambridge. *Hen.*—1, L. Patton. 2, M. Kew. *hc*, E. Kendrick, jun.

TURKEY.—*Young Cock.*—1, F. Lythall. 2, E. Leech, jun. *hc*, E. Arnold, Whitlessford. *Young Hen.*—1 and 2, M. Kew. *hc*, E. Arnold; E. Leech.

DUCKS.—*White Cocker.*—1, E. Leech. 2, T. Holton, Buckingham. *hc*, M. Kew; J. T. Sharp, Kettering; W. H. Kelson.

DUCKS.—*Rouen.*—Cup, J. Wright, Melton Mowbray. 2, L. Patton. *hc*, E. Leech; W. Hughes; H. Marshall, Bingham; T. Burnaby, Kettering; L. Patton. *c*, J. White, Wakefield.

DUCKS.—*Any other Variety.*—1 and 2, — Pickworth, Sleaford (Carolina and Sheldrake). *hc*, Rev. C. H. Lucas, Stamford (Carolina and Ruddy Shield); M. Leno (Carolina).

GESE.—*White.*—Prize, E. Leech. *hc*, J. Barker, Melton Mowbray. *Goslings.*—1, M. Kew. *hc*, Mrs. Berridge.

GESE.—*Grey.*—Cup, E. Leech. *hc*, M. Kew; A. Provost; W. Kirk, Wymondham, Oakham. *c*, M. Kew. *Goslings.*—1, T. M. Derry. *hc*, N. Whitechurch.

SELLING CLASS.—*Cock or Cocker.*—1, J. Longland (Dorking). 2, J. M. Wellington (Crève-Cœur). 3, T. M. Derry. *hc*, J. Tyler, jun. (Game); Mrs. A. Williamson (White Cocker); Mrs. A. Woodcock (Buff Cocker); Marchioness of Exeter (Coloured Dorking); J. Freeman (White Dorking); J. Richardson; A. Darby (Buff Cocker); T. Garton (Game).

SELLING CLASS.—*Hens or Pullets.*—1, W. Dring (Crève-Cœur). 2, C. Speed (Dark Dorking). 3, Mrs. A. Woodcock (Buff Cocker). *hc*, M. Brown (Black Spanish); G. W. Hibbert, Manchester; W. R. Bull (Spanish); C. H. Kite (Duckwing Game). *c*, E. Kendrick, jun.

SELLING CLASS.—Cup, Rev. C. H. Lucas (Toulouse Geese). 2, N. Whitechurch. 3, M. Berridge (Pea Fowl). *hc*, M. Kew (Turkey); J. T. Sharp (White Aylesbury). E. Leech; T. M. Derry. *c*, Hon. C. Parker.

PIGEONS.

TUMBLERS.—1, H. Yardley, Birmingham. 2, W. R. Pratt, Oxford.

CARRIERS.—*Cock.*—1, E. Walker, Leicester. 2, A. Billycad, Nottingham. *hc*, E. Walker; H. Yardley. *c*, W. Massey, Spalding. *hc*, W. Massey. 2, E. Walker. *hc*, E. Walker; H. Yardley.

CARRIERS.—*Young.*—1, C. H. Clark, Nottingham. 2 and *c*, W. Massey. *hc*, A. Billycad; C. H. Clark; E. Walker.

POUTERS.—1, H. Pratt, Loddles, Birmingham. 2, W. R. Rose, Kettering. *hc*, W. R. Rose; H. Pratt.

JACOBIANS.—1, T. W. Swallow, Northampton. 2, A. A. Vander Meersch.

FANTAILS.—1, J. Walker, Newark. 2, J. F. Loversidge. *c*, W. R. Pratt; A. A. Vander Meersch; H. Yardley.

TRUMPETERS.—1 and 2, W. Gamble, Melton.

NUSS.—1, Withheld. 2, H. Yardley.

TURBOTS.—1, W. & G. Cutler, Crookesmore Sheffield. 2, O. E. Cresswell, Early Wood, Bagshot.

RUNTS.—1 and 2, T. D. Green, Saffron Walden. *hc*, H. Yardley.

ANY OTHER VARIETY.—1, H. Yardley. 2, A. A. Vander Meersch. *hc*, A. A. Vander Meersch; T. Chambers, jun., Northampton.

SELLING CLASS.—1, J. Nash, Walsall (Barbs). 2, E. Walker (Carriers). 3, J. Barker (Trumpeter). *hc*, A. Parsons, Nottingham (Blue Owls); J. E. Palmer, Peterborough (Black Carriers); J. H. Watkins (Pouters); T. Chambers, jun.

The Judges were Mr. W. B. Tegetmeier, London, for Pigeons.

Mr. W. B. Jeffries, Ipswich, poultry classes 1 to 21 inclusive.

Mr. S. Fielding kindly officiated in the remaining classes in place of Mr. Hewitt, who, we are sorry to say, was prevented from attending by an accident he sustained on his way to the Crystal Palace Show.

HARTLEPOOL POULTRY SHOW.

This Show was an experimental affair, being announced as the "first" annual Exhibition; but from the support received, I should imagine Hartlepool will become a permanent fixture. The Society is composed of as enthusiastic a set of workers as can be desired, has an energetic Secretary, and is possessed of a very substantial-looking little yellow bag, such as one sometimes sees piled-up behind bank counters. It has all the elements of success within reach, and with a little more experience will rank high among the exhibition towns in the northern circuit. Subjoined is the award of prizes, a reference to which will tell those belonging to the great "fancy" who and what were successful. The catalogue is conspicuous by the absence of a few famous names, without which no list seems complete; but a revised schedule will, on the next occasion, secure to Hartlepool the full meed of support it deserves.

The variety of objects exhibited made the Show, as a whole, very attractive. Hartlepool seems to be great in stuffed birds. I never saw anything like the collection of last week. Apart

from the gorgeous beauty of some of the specimens, the natural life-like mounting was admirable.

The dressed poultry, too, had a very Christmas-like look. The prize birds were very large, and were prettily ornamented with ribbons. To one Turkey which was "dressed" at the King's Head, I award a V.H.C.—W. A. BLAKSTON.

DORRINGS.—1, Countess of Tankerville, Alnwick. 2, H. H. Taylor, West Hartlepool. 3, Miss Procter, Hartlepool. *hc*, H. H. Taylor; E. Frawn, Whitehaven. *c*, W. Whitfield, Fence Houses.

COCHINS.—1 and 2, G. H. Procter, Durham. 3, T. Braithwaite, Stockton. *hc*, G. H. Procter; R. S. Storey, Bedale; T. Redman, Whitby.

BRAHMA.—Footstall. 1, T. S. Turner, Broughbridge. 2, H. H. Taylor. 3, J. N. Lawson, Sunderland. *hc*, F. H. Williams, Brecon; H. H. Taylor; R. Henderson, Middlesborough; R. Moore, East Rainton (2); T. Redman.

SPANISH.—1, E. Brown & Son, Sheffield. 2, R. Moore. 3, H. H. Taylor.

GAME.—*Black-breasted and other Reds.*—1, E. Sharp, Marley Hill. 2, I. and J. Robson, Bishop Auckland. 3, T. Weatherill, Whitby. *hc*, I. Spence, West Hartlepool; I. Gibson, Stanhope; I. & J. Robson, Bishop Auckland. *Any other variety.*—1 and 2, I. & J. Robson. 3, P. Sharp. *hc*, I. Gibson.

HAMBURGERS.—*Gold and Silver-spanied.*—1 and 2, Countess of Tankerville. 3, G. Holmes, Great Driffield. *hc*, G. Speedy; R. H. Ashton, Manchester; W. Bearpark, Ainderby Steeple. *Gold and Silver-pencilled.*—1, T. Redman. 2, I. Preston. 3, Countess of Tankerville. *hc*, Countess of Tankerville; R. Moore; T. Redman; R. H. Ashton.

BARNDOOR.—1, R. Smith. 2, R. Moore. Equal 2, Miss Procter. *hc*, H. H. Taylor; W. Whitfield.

FRENCH.—1, Lady Bolton, Bedale. 2, H. H. Taylor. 3, Rev. J. Milner, Bellerby. *hc*, Countess of Tankerville; Miss Peacock, Wolviston; H. H. Taylor.

ANY OTHER VARIETY.—1, W. Bearpark (Polands). 2, T. Weatherill, Whitby. 3, Miss Stephenson, Wolviston (Polands). *hc*, T. Redman; W. Bearpark (Hamburgs).

BANTAMS.—*Game.*—1, D. Hunter, Sunderland. 2, I. & J. Robson. 3, W. C. Deane, Whiteby. *hc*, R. Malmun, Towlaw; I. Torbeck, Middlesborough (2); T. South, Whitby; I. & J. Robson (2); H. & C. Thompson, Sunderland; I. N. Lawson, Sunderland; W. Rogers, Sunderland; N. Maynard, Northallerton. *Any other variety except Game.*—1, W. H. Tomlinson, Newark. 2, G. Holmes, Great Driffield. 3, T. S. Turner. *hc*, R. Henderson; R. H. Ashton. *c*, H. H. Taylor; T. Carver, Broughbridge.

DUCKS.—*Rouen.*—1, W. Swann, Hirst Head, Bedlington. 2, Rev. J. Milner. 3, W. Ardley, Yarm. *hc*, Countess of Tankerville; C. Graham; T. Simpson. 2, E. Eden; T. Weatherill. *c*, J. Alderson. *Any other variety.*—1, T. Carver. 2, Countess of Tankerville. 3, Rev. J. Milner. *hc*, W. Comer, Hartlepool.

SELLING CLASS.—1, I. Preston. 2, J. Weatherill. 3, W. Hedley. *hc*, Countess of Tankerville; T. Carver; J. N. Lawson.

GESE.—1, R. Crowe, Wolviston. 2, Miss Stephenson. 3, F. McGee, Hutton Henry.

TURKEYS.—1 and 2, W. Corner.

GUINEA FOWLS.—1, W. Corner. 2, M. E. Egdel, Billingham.

PIGEONS.

TUMBLERS.—*Almond Short-faced.*—1, R. & I. Anderson, Newcastle. 2 and 3, E. Horner, Harewood. *hc*, R. & I. Anderson; T. Rule, Gilesgate, Durham; T. E. Pyman, West Hartlepool; I. Blanchard, Driffield. *Any other variety.*—1, E. Horner. 2 and 3, R. & I. Anderson. *hc*, R. & I. Anderson; W. Lumb, Rochdale; E. Horner.

CARRIERS.—1, Dunn & Prest, Saltburn. 2, A. Brown, Darham. 3, E. Horner. *hc*, R. & I. Anderson; H. Cockton, Middlesborough; E. Horner. *c*, R. & I. Anderson.

POUTERS.—1, T. Rule. 2, E. Horner. 3, I. Fawcett, Whitby. *hc*, R. & I. Anderson; T. Rule (2); T. E. Pyman, West Hartlepool; E. Horner.

BARBS.—1, R. & I. Anderson. 2 and 3, E. Horner. *hc*, R. & I. Anderson; I. Fawcett; C. G. Cave, Spalding; H. Tomlinson.

TRUMPETERS.—1 and 2, E. Horner. 3, T. Rule. *hc*, T. Rule (2); R. Moore; R. Helliwell, Halifax.

FANTAILS.—1, 2, and 3, T. Rule. *hc*, T. Inrie, Ayr; J. F. Loversidge, Newark; J. Fawcett; T. C. Taylor; W. Tomlinson (3); E. Horner. *c*, J. F. Loversidge; T. C. Taylor.

JACOBIANS.—1 and 3, E. Horner. 2, R. & I. Anderson. *hc*, R. & I. Anderson; T. Rule (2); I. Blanchard. *c*, T. Rule; I. Blanchard (2); J. Smithers, Sheffield.

TURBOTS.—1, E. Horner. 2, I. Blanchard. 3, A. Brown, Durham. (The whole class highly commended.)

NUSS.—1, E. & I. Anderson. 2, W. Binns. 3, E. Horner. *hc*, R. & I. Anderson; W. H. Tomlinson. *c*, Umpleby, Broughbridge; E. Horner.

MAGPIES.—1, E. Horner. 2, M. Ord, Sands, Sedgfield. 3, E. Speedy. *hc*, M. Ord; I. Blanchard; E. Horner. *c*, R. & I. Anderson; G. W. Sivewright; W. Bearpark.

DRAAGONS.—1, E. Horner. 2 and 3, R. & I. Anderson. *hc*, C. Stroughair, Hartlepool; W. Binns; E. Horner.

ANY OTHER VARIETY.—1, E. Horner. 2, M. Ord. 3, I. Blanchard. *hc*, M. Ord; P. M. Cralen, Hartlepool; R. & I. Anderson; I. W. Collinson; T. Inrie, G. Sadler; R. Helliwell; W. Lumb.

SELLING CLASS.—1, I. Blanchard. 2, E. Horner. 3, I. Smithers, Sheffield. *hc*, R. & I. Anderson; H. Cockton; G. W. Sivewright; T. E. Pyman; I. Harland, Norton; C. G. Cave, Spalding (2); T. C. Taylor. *c*, T. Rule.

CANARIES.

BELGIANS.—*Clear or Ticked Yellow.*—1, R. Robinson, Middlesborough. 2, J. N. Harrison, Belper, Derby. 3, R. Moody, Hartlepool. *Clear or Ticked Buff.*—1, R. Robinson. 2, J. N. Harrison.

NORWICH.—*Yellow.*—1 and 2, G. J. Barnesby. 3, R. Robinson. *c*, J. Cleminson, Darlington; W. Watson. *Clear Buff.*—1, J. Metcalf, Hartlepool. 2, G. J. Barnesby. 3, J. Cleminson. *c*, G. J. Barnesby; M. King, Scarborough. *Evenly-marked.*—1, J. Cleminson. 2, T. Armstrong, Great Broughton. 3, W. W. Ellerton & Mounsey. *c*, M. King.

CINNAMON.—*Yellow or Buff.*—1, Grainger & Allenby, Durham. 2, J. N. Harrison. 3, J. Cleminson. *c*, T. Taylor, Middlesborough; W. W. Johnson, Carlisle, Northallerton. *Variety.*—1, R. Robinson. 2, W. W. Johnson. 3, J. W. Hobson, Old Elvet, Durham.

LIZARD.—*Golden-spanied.*—1, J. Taylor, Middlesborough. 2 and 3, R. Ritchie, Darlington. *c*, J. N. Harrison; W. Watson (2). *Clear Green.*—1, J. Rowland, Skelton, Mareske. 2, R. Hawman, Middlesborough. 3, J. Stevens, Middlesborough. *c*, J. Rowland; J. N. Harrison. *Silver-spanied.*—1, J. N. Harrison. 2, R. Ritchie. 3, J. Taylor. *c*, R. Hawman; M. King; R. Ritchie.

FORENSEE.—1, J. Stevens. 2, J. Rowland. *c*, J. Garbutt, Broughton, Northallerton; R. Hawman; T. Armstrong; J. Rowland; J. Cleminson.

SELLING CLASS.—1, J. Garbutt. 2, T. Jobling. 3, Moore & Wynne, Northampton.

GOLDFINCH.—1, Ellerton & Mounsey, Darlington. 2, W. C. Burniston, Middlesborough. 3, J. N. Harrison.

GOLDFINCH MULES.—1, R. Hawman. 2, J. Stevens. 3, Grainger & Allenby, M. Burton.

MULES.—1, W. Gibson, Hartlepool. 2, J. Nicholson, Hartlepool. *c*, F. Nicholson, Stranton, West Hartlepool.

PARROTS.—1, W. Boden, West Hartlepool. 2, C. Thompson, Hartlepool. Whole class commended.

RABBITS.—*Lop-eared.*—1, A. Eastern, Hull. 2 and 3, W. Boden, West Hartlepool. *vhc*, W. H. Webb, Ebbw. *hc*, W. Boden; G. Hoggett; A. Eastern. *Color.*—1, R. F. Craggs, Hartlepool. *Any other variety.*—1, I. Barron, Rochdale Lanes. 2, S. & G. Hudson, Hull. 3, T. E. Pyman, West Hartlepool. *hc*,

I. & A. Weaver, Leominster; C. Stephenson, Hart; S. & G. Hudson; T. E. Pyman (2); W. H. Tomlinson; W. Donkin, Driffield.

JUDGES.—*Poultry, Pigeons, and Rabbits*: Mr. Hutton, Pudsey, Leeds. *Cage Birds*: Mr. W. A. Blakston, Sunderland.

SCARBOROUGH BIRD SHOW.

THE fourth annual Exhibition of Cage Birds was held in the Mechanics' Hall, Scarborough, on the 20th and 21st ult. The classes, although not so numerous as at a show in the same town a short time previously, contained many very excellent specimens. Class 1, Clear Yellow Norwich, contained a specimen of very suspicious appearance, which, on being tested and closely examined, proved to have been disfigured with a deep dye. The Lizards, Cinnamons, Crested Norwich, and Mules were exceptionally good.

The Show was well conducted, and the arrangements reflect credit on the Secretary, Mr. C. Haughton, and the Committee. The following is the prize list:—

NORWICH.—*Clear Yellow*.—1 and 2, Haughton & Robinson. 3, Moore and Wynne, Northampton. *hc*, R. Hawman, Middlesborough. *c*, J. Calvert, York. *Clear Buff*.—1 and 3, M. King. 2, Haughton & Robinson. *hc*, Moore & Wynne. *c*, G. Medd, Scarborough.

NORWICH.—*Evenly-marked Yellow*.—1, R. Hawman. 2, Moore & Wynne. 3, Greenwood & Jackson. *hc*, M. King, Scarborough. *Evenly-marked Buff*.—1, M. King. 2, Moore & Wynne. 3, Greenwood & Jackson. *hc*, Haughton & Robinson.

NORWICH.—*Ticked and Unevenly-marked Yellow*.—1, S. Bunting. 2, G. Medd. 3, M. King. *hc*, S. Bunting; M. King. *c*, Moore & Wynne; Haughton and Robinson. *Ticked and Unevenly-marked Buff*.—1 and 3, S. Bunting, Wook Larkin, Derby. 2, G. Medd. *hc*, Moore & Wynne. *c*, G. Medd; M. King; Haughton & Robinson.

NORWICH.—*Any variety of Crested*.—1, M. King. 2, 3, and *hc*, Wallace and Beloe. *c*, D. Quin & Son, York; Greenwood & Jackson.

YORKSHIRE.—*Clear Yellow or Buff*.—1, R. Hawman. 2, G. Champley, Scarborough. 3, G. Medd. *hc*, D. Quin & Son. *c*, Tenniswood & Jobling. *Evenly-marked Yellow or Buff*.—1, J. Stevens. 2, Tenniswood & Jobling, North Acland.

LIZARD.—*Golden-spangled*.—1, J. Taylor, Middlesborough. 2, R. Ritchie. 3, J. Ellis. *hc*, J. Taylor; J. N. Harrison. *c*, M. King. *Silver-spangled*.—1, R. Ritchie, Darlington. 2, J. Taylor. 3, J. N. Harrison. *hc*, S. Bunting; M. King. *c*, Moore & Wynne.

CINNAMON.—*Yellow or Buff*.—1 and 3, Wallace & Beloe. 2, R. Ritchie. *hc*, J. Taylor, Middlesborough; Wallace & Beloe; J. N. Harrison; Moore & Wynne. *c*, J. Calvert.

ANY OTHER VARIETY.—1, W. Catton. 2, J. Stevens, Middlesborough. 3, J. N. Harrison. *hc*, Haughton & Robinson.

MULES.—*Evenly-marked Goldfinch*.—1, R. Hawman. 2, J. Stevens. 3, M. Burton. *hc*, R. D. Waite; M. Burton. *Dark*.—1 and *hc*, M. Burton. 2, Tenniswood & Jobling. 3, W. Lister. *c*, G. Medd.

CANARIES.—*Cage of Four*.—1, R. Ritchie. 2, Wallace & Beloe, Berwick-on-Tweed. 3, G. Medd.

FOREIGN BIRDS.—*Any variety*.—1 and 3, J. Calvert. 2, J. Wyrill. *hc*, Miss Townsend.

JUDGE.—Mr. G. J. Barnesby, Derby.

CRYSTAL PALACE PIGEON SHOW.

(From a Correspondent.)

THIS was by far the best Show of Pigeons ever brought together, and without doubt the same as regards arrangement and pens, and now and henceforth must be quite as attractive as the poultry, for the fancy is more popular, as is shown by £50 being given for one Dun Carrier hen of Mr. Wiltshire's, £25 for a Dun Carrier cock, and £20 each for three young Carriers, the former being the highest price to my knowledge ever given for a single bird. The Palace has no equal as a place for showing off birds to advantage, as, besides being heated, there is plenty of room between each aisle to see the birds, and I have little doubt that many birds returned in better condition than they came, which is no small consideration in these days of high prices.

The first class to attract my attention was the Pouters, shown in beehive-shaped pens, and, notwithstanding the absence of the Scotch fanciers, the birds were a very good lot, very well judged, and the prizes well distributed. The class for Pigmy Pouters contained good and delicately-marked specimens.

I next came to the Carriers, where the competition was most severe, and too much for the powers of one Judge, and I would suggest that another year there should be two judges of this class, especially if Mr. Corker is on the list of judges, as its acknowledged fact that his knowledge of this breed is second to that of no other judge; besides which, Carriers, like all other shy birds, want a deal of persuasion to show their true form. The best bird (bought for £25), belonging to Capt. Heaton, was very highly commended only, on what grounds I am at a loss to conceive; some said that the eye-wattle was too red. This I can hardly think, as it's a sign of health, and not of a cross with a Barb, as I heard one party say; but in my opinion the only possible fault was in his beak, which was a little spindly; in every other point this bird was the *beau idéal* of a Carrier. The class for Black Carriers bred in 1872 was the strongest in all the Carrier classes, and contained some very excellent birds; In Duns Mr. Wiltshire won the cup against the Blacks with a bird that left nothing to be desired, and which, though only commended at Croydon, we spoke of so favourably in our report of that show.

The competition in Dragons was very strong, the cup for Blues going to a bird of Mr. South's.

The class for Almonds and other varieties of Tumblers was the best I have seen for colour, and made birds were less numerous than usual. The prizes were well spread.

In Jacobsins the cup went to a very good Red in a strong class. Fantails were a show in themselves, and were well judged. Trumpeters were few, but good. In English Owls the cup was taken by an exquisite specimen of White in the foreign varieties. In Turbits the cup was won by a good Silver. The prize for the best four pairs of Pigeons, exclusive of Carriers, Pouters, and Tumblers, went to a pen of White Fantails, some plain-headed and some with a peak.

THE RABBIT SHOW AT THE CRYSTAL PALACE was the largest Rabbit Show ever held in England, had been looked forward to with much anxiety by all fanciers, and we are glad to be able to pronounce it a great success. The pens were large, and the management satisfactory. Of Lops twenty were exhibited varying from 22 to 23 inches in length of ear, and two Rabbits measured over 23½ inches.

THE BEE SEASON IN CHESHIRE.

I HAVE not had an opportunity before of sending you a short account of the honey season in this part of Cheshire, so now proceed to do so. I succeeded in wintering twelve out of fourteen stocks, and things looked very promising, for my stocks were unusually strong in May. The white clover in this neighbourhood was more abundant than I ever remember to have seen it, and I had no difficulty in getting the bees to take to supers; but alas! then commenced wet weather, which continued more or less throughout the summer, and was so persistently against the labours of our little friends that I wonder how they managed to keep things going; and yet, owing, I suppose, to the unusual luxuriance of the clover, honey was gathered very fast whenever the weather allowed the bees to work. From two hives in particular the results were excellent, as I obtained from them 64 lbs. and 50 lbs., respectively, of fine super honey, and both stocks in good condition for winter. I have had about 2 cwt. of honey altogether, and only broken-up one stock.

I took thirteen hives to the heather, which was in fine bloom, in August, all being in capital condition as to population, and supers partly filled on every hive, for I had carefully prepared them to return me a grand harvest, thinking as the summer had been so wet the autumn would be fine. But "the best-laid schemes," &c. I left them for six weeks, and it rained nearly the whole time, so what honey was in the supers disappeared, and I brought them back lighter than when they left home.

Swarming has been easy to control this season. I have only had seven swarms, including casts, and most of them have been utilised in strengthening stocks, so winter finds me with fifteen hives in good condition, and I have only to feed two or three up a little; and taking a retrospect of the whole season I am content to "rest and be thankful," especially when my neighbours who still cling to the old way have done next to nothing; for stocks which were heavy in July had fallen off lamentably by the end of September, and in most cases they are content to keep all their stocks and hope for better luck next year.

I am glad to notice that Mr. Pettigrew and a few friends have organised an annual meeting of bee-keepers, as good results to all concerned must follow such gatherings; indeed, I have often wondered that we should be so much behind our American brethren in these matters. It is also a sign of the increasing interest being taken of late in our favourite pursuit that the committees of flower shows are encouraging bee-keepers to exhibit; and I am sure it will always be one of the most interesting departments of any show to see a nice lot of hives and honey, besides the novelty of the thing. I have never yet shown in competition, but will certainly do so if it be made a feature of any show within a reasonable distance.—W. BROUGHTON CARR, Higher Bebington.

AUTUMN FEEDING OF BEES.

HOWEVER people may differ as to the benefits of feeding bees in the spring, we think they will all agree that to feed in the fall is poor economy, except in special cases. If stocks are in too poor condition to winter over, better make one good one out of two or even three, than to attempt at this season to feed them into good safe wintering condition. We have fed stocks that had not 5 lbs. of honey in October, and made them good colonies, and wintered them safely. We did it as an experiment, and found that it "cost us more than it came to"—a homely and ungrammatical phrase, but an expressive one.

Now, our course is to go through the apiary some time in October, see the condition of every colony, select the best queens to save, destroy poor ones, and then selecting the best combs from two colonies, place them in order in one hive, and sprinkling the bees well with sweetened water and peppermint, put them all together. This is no difficult matter. It may be done in a few moments. Every year confirms our opinion that

a strong colony is the only one that preserves any value. We know that after a poor season the desire is strong to keep as many stocks as possible, but in this matter our strength is not in numbers. Better have one good one in the spring than a dozen that have barely lived through; you will be better off even in point of numbers by June. In a good season, and under favourable circumstances, one can increase very rapidly (if he knows how!) In a poor season when all is unfavourable he had better far unite than divide. We have often found this true.

The exact amount of honey necessary to keep a colony through the winter can hardly be estimated, so much depends on the season, the locality, and the manner of wintering. Remember that bees do not waste it if they have a surplus, and that if it is not too much in the centre of the hive, it is no disadvantage if they have more than they need.—(*American Beekeepers' Journal*.)

OUR LETTER BOX.

BLACK BANTAM CLASS AT MANCHESTER POULTRY SHOW.—"In answer to numerous inquiries relative to the Black Bantam class at the above Show on December 26th and 27th, I can state upon authority that the class is for one cock and two hens, any age.—R. H. ASHTON, *Mottram, near Manchester*."

PIGEON LOST (P. I'Anson).—"If the Secretary can aid with evidence that the bird was delivered to the railway authorities, you could recover from them in the County Court.

POINTS IN BLUE AND BLACK POUTERS (H. W. L.).—Blues should be of a clear and bright colour; the sides of the wings, the head, breast, back, and tail should be blue; the wing-coverts should be crossed with two black bars; there is also a black band nearly at the edge of the tail; a well-defined crescent of white should be upon the front of the crop. Blacks should be marked similarly. As the Pouter has a great many important points and properties, being a high fancy bird, and you wish to become an exhibitor, you had better have Brent's "Pigeon Book," in which all are enumerated, sent from our office post free for nineteen stamps.

LOSS OF SONG IN A CANARY WHILE MOULTING (A Friend to Canaries).—The loss of song is one of the usual accompaniments of moulting. Even though the moulting may be complete, the bird will not, probably, break into full song this side of Christmas. He will be none the worse for a good rest. The time occupied in moulting varies from three or four weeks to months. Birds which are apparently fully moulted will, upon examination, frequently show a great number of half-developed feathers.—W. A. BLAKSTON.

BREEDING HIGH-COLOURED AND DARK-CRESTED CANARIES (E. Barker).—Select for your breeding stock high-coloured birds, not quite clear, but having some slight marks or ticks about them. An absolutely clear bird is perfection, and to breed from such is to ensure decline. From such as I have indicated you may expect to get high-coloured clear birds. I give this as a general rule without going into the theory of the matter. Your Buff cocks have what are known as grey crests. If you pair them with close-feathered hens having markings about them, you will get plenty of dark crests, and the more exact the marking of the hens the greater chance there is of getting well-marked and crested young ones. By pairing two Buffs you will get feather and compactness of crest, but at a sacrifice of colour. All marked Canaries are not higher in colour than clear birds, but a depth of colour is sometimes seen in a marked or ticked bird which is not attainable in a clear one.—W. A. BLAKSTON.

TEACHING A BULLFINCH TO PIPE (J. Arthur).—A bird organ can be had at any musical-instrument shop. The bird must be taken in hand when very young, and before he has had an opportunity of learning any other song. Confine him in a dark closet, or prevent him from having his attention distracted by outward objects by covering his cage with a cloth. Then give him his lessons early in the morning on an empty stomach, and reward a chirp with a grain of hempseed. After morning lessons give him his breakfast and eat your own in the exercise of great faith. Always play your tune from beginning to end without a stop, with an organ—any other plan, of course, is impossible, the difficulty sometimes being to get a refractory instrument to stop when you wish it; but if you vary your instrumental solo with whistling, you must not whistle snatches of any melody, but the entire tune. Teaching Bullfinches to pipe well is an art almost entirely confined to the Continent, and well-drilled birds realise high prices. Many can pipe a simple air almost to its close, but when they come to the last bar they finish with a cadence scarcely more melodious than the fag end of a Coochin cock's melancholy crow.—W. A. BLAKSTON.

LARK DECLINING (Liverpool).—Its ailment appears to be the result of inattention to the purity of its food and water, and exposure to draughts. If it is not as yet so far gone as to warrant its ailment being termed consumption, the following homoeopathic remedies (which may be obtained at any homoeopathic chemist's in sixpenny bottles), would afford great relief, if not effect a cure.—Aconite, phosphorus, and nux vomica. The first for one day, given in its water in the proportion of one drop to a tablespoonful, and the second and third in the same way on alternate days for a few days, and then again have recourse to aconite. Give up the treatment gradually as soon as there are signs of improvement, or at once if there are none within a week. The diet should be as natural as possible. Substitute a few drops of cod-liver oil for the lard which has previously been given with its food. The bird should be kept free from draughts, and at an even and moderate temperature.—J. PARKER.

BEE HOUSE (J. P., of York).—You may have a zinc or tin tube if you like as a passage through the wall of your bee house. We should prefer, perhaps, to have a good-sized opening, say 6 inches wide and 1 inch high, in the brickwork, and inside, against this, we should fix, the whole length of the bee house, a piece of wood of sufficient thickness, say 3 inches square, through which we would make the various tunnels diagonally upwards. On the top of this the different hive-boards would rest, each with its entrance let into it, and corresponding with the tunnel in the block. This is, in fact, our own plan in our bee house. You must be careful to allow of no crevices between the brickwork and the wood block.

DRONES LATE IN AUTUMN (Midland Counties Bee-keeper).—It is not a normal condition of a hive to possess drones so late in the season as November, and we fear it augurs ill for the prospect of its future prosperity. It may arise either from the stock having lost its queen, probably at the time of removing one of the supers, in which case drones are frequently allowed to remain alive during the whole term of their natural existence, in the very

forlorn hope, perhaps, of their services being required; or it may happen in the case of a queen being a breeder of drones only, owing to retarded or non-impregnation. Also when queens become very aged, or sometimes in consequence of accident, they are unable to breed anything but drones. From whatever cause it may arise, there is little hope of saving such a colony, unless means are taken to supply it with a fertile queen. During the summer this is, of course, easy enough, but at the present season it can only be accomplished by the addition of a living queen or the bees of another stock. It is for you to consider whether the preservation of the hive is worth the expense and trouble which such a proceeding would at this time involve.

DARK HONEYCOMB (G. S.).—The piece of comb sent, which you suppose to be filled with "nasty brown waxy stuff," is simply densely filled with pollen, a few cells only containing honey. You cannot expect to have good honey extracted from such comb. To obtain better honey, you must either place supers on your hives, or, if you will still work on the cottage system, you must have larger hives and take up your swarms of the current year instead of the old stocks occasionally, leaving a swarm or two to take the place of any that may die or be worn-out. It is a great pity that stocks containing combs such as you sent for inspection, so well supplied with pollen, should be sacrificed for the very small portion of honey which they yield. They are always worth double as much to keep for the sake of the swarms.

METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	A.M.					IN THE DAY.					Rain.
	Barom. at 39° and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp of Soil at 1 ft.	Shade Tem- perature.		Radiation Temperature			
		Dry.	Wet.			Max.	Min.	In sun.	On grass		
1872. Nov. Dec.	Inches.	deg.	deg.	N.W.	deg.	deg.	deg.	deg.	deg.	In.	
We. 27	29.710	51.0	47.1		47.2	55.0	48.8		75.5	43.9	—
Th. 28	29.697	46.2	45.8	N.W.	47.0	49.5	45.3		52.1	43.5	0.050
Fri. 29	29.585	49.2	41.3	S.W.	46.2	49.0	39.2		73.3	35.8	0.170
Sat. 30	29.055	47.3	46.1	S.E.	45.9	52.2	41.0		74.1	39.2	0.052
Sun. 1	29.074	47.5	46.4	S.	45.6	50.6	44.4		62.9	41.2	0.045
Mo. 2	29.545	43.2	42.5	N.E.	45.0	48.3	38.9		61.6	33.1	0.093
Tu. 3	29.438	44.6	43.7	N.E.	45.2	45.8	42.3		49.7	38.4	0.040
Means	29.495	46.0	44.7		46.0	50.1	42.7		64.2	39.3	1.080

REMARKS.

27th.—Very fine early, rather cloudy towards noon, but on the whole a fine day, though rather cloudy at night.

28th.—Morning fine, rain at noon, fair after, but dull in the evening.

29th.—Fair in morning, very bright from noon to 4 P.M., then rather dull, and rain at 7.30.

30th.—Fair at 9 A.M., rain at 10.30, and alternate sunshine and heavy rain all the afternoon; fair in the evening, but wet all night.

Dec. 1st.—Very heavy rain at 8 A.M., fair by 9 A.M., and fine by 10; a shower about noon, and heavy rain between 6 and 7 P.M., and showery evening.

2nd.—Fair morning, fine forenoon, and till after 2 P.M., then cloudy; rain at 5, fair for some time, but heavy rain again between 10 and 11.

3rd.—Wet morning, and very showery all day.

The barometer still continues low, and the temperature high, though not quite so high as last week. The weather generally has been very wet and uncomfortable. More than 1 inch of rain has again been registered, and scarcely any sun has been visible. The clouds prevented the meteors being seen in this neighbourhood.—G. J. SYMONS.

COVENT GARDEN MARKET.—DECEMBER 3.

A VERY thin attendance at market, and consequently a general dullness prevails. Hothouse Grapes are sufficient for the demand. Pines continue in excess; and the late heavy consignments of Pears from the Continent and other places have caused a considerable decline in price, the most of them being ripe and fit for use.

		S. D.		S. D.		S. D.		S. D.	
		S. D.		S. D.		S. D.		S. D.	
Apples.....	½ sieve	3	0 to 5	0	0	Mulberries.....	½ lb.	0	0 to 0
Apricots.....	doz.	0	0	0	0	Nectarines.....	doz.	0	0 0 0
Cherries.....	per lb.	0	0	0	0	Oranges.....	½ 100	4	0 10 0
Chestnuts.....	bushel	12	0	20	0	Peaches.....	doz.	0	0 0 0
Currants.....	½ sieve	0	0	0	0	Pears, kitchen.....	doz.	1	0 3 0
Black.....	do.	0	0	0	0	Pine Apples.....	lb.	3	0 6 0
Figs.....	doz.	0	0	0	0	Pisums.....	½ sieve	0	0 0 0
Fibers.....	lb.	1	0	1	6	Quinces.....	doz.	1	0 3 0
Cubs.....	lb.	1	6	2	0	Raspberries.....	lb.	0	0 0 6
Gooseberries.....	quart	0	0	0	0	Strawberries.....	½ lb.	0	0 0 0
Grapes, hothouse.....	lb.	2	0	5	0	Walnuts.....	bushel	15	0 30 0
Lemons.....	½ 100	6	0	10	0	ditto.....	½ 100	2	0 2 0
Melons.....	each	1	6	3	0				

VEGETABLES.

		S. D.		S. D.		S. D.		S. D.	
		S. D.		S. D.		S. D.		S. D.	
Artichokes.....	doz	2	0 to 4	0	0	Mushrooms.....	pottle	1	0 to 3
Asparagus.....	½ 100	0	0	0	0	Mustard & Cross.....	punnet	0	2 0 0
Beans, Kidney.....	½ 100	1	0	2	0	Onions.....	½ bushel	2	0 4 0
Beet, Red.....	doz.	1	0	3	0	Pickling.....	quart	0	6 0 0
Broccoli.....	bundle	0	9	1	6	Parsley per doz. bunches	2	0	3 0
Cabbage.....	doz.	1	0	1	6	Parsnips.....	doz.	0	9 1 0
Capsicums.....	½ 100	2	0	3	0	Peas.....	quart	0	0 0 0
Carrots.....	bunch	0	6	0	0	Potatoes.....	bushel	3	6 6 0
Cauliflower.....	doz.	2	0	4	0	Kidney.....	do.	0	0 0 0
Celery.....	bundle	1	6	0	0	Round.....	lb.	0	3 0 0
Coeworts.....	doz. bunches	2	0	3	0	Radishes.....	doz. bunches	1	0 1 0
Cucumbers.....	each	0	9	2	0	Rhubarb.....	bundle	0	0 0 0
Pickling.....	doz.	0	0	0	0	Salsafy.....	½ bundle	1	0 1 6
Endive.....	doz.	2	0	0	0	Savoy.....	doz.	1	0 2 0
Fennel.....	bunch	0	3	0	0	Scorzonera.....	½ bundle	1	0 1 6
Garlic.....	lb.	0	6	0	0	Sea-kale.....	basket	2	0 3 0
Herbs.....	bunch	1	6	0	0	Shallots.....	bushel	2	0 3 0
Horseradish.....	bundle	8	0	4	0	Spinach.....	doz.	1	0 2 0
Leeks.....	bunch	0	2	0	0	Turnips.....	bunch	0	3 0 0
Lettuce.....	doz.	0	9	1	0	Vegetable Marrows.....	doz.	0	0 0 0

WEEKLY CALENDAR.

Day of Month	Day of Week	DECEMBER 12—18, 1872.	Average Tempera- ture near London.			Rain in 43 years.	Sun Rises		Sun Sets.	Moon Rises.		Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.		m.	h.		m.	h.				
12	Th	Nees von Esenbeck died, 1837.	48.0	37.0	42.5	13	59	af 7	50	af 3	29	2	6	5	347
13	F		47.5	36.5	42.0	23	0	8	50	3	55	2	24	6	348
14	S	PRINCE CONSORT DIED, 1861.	46.9	34.3	40.6	21	1	8	50	3	25	3	36	7	349
15	Sun	3 SUNDAY IN ADVENT.	47.0	33.6	40.3	19	2	8	50	3	6	4	44	8	350
16	M	Cambridge Term ends.	46.5	32.9	39.7	15	2	8	51	3	58	4	40	9	351
17	Tu	Oxford Term ends.	45.9	34.0	39.9	20	3	8	51	3	59	5	24	10	352
18	W	EMBER WEEK.	45.8	33.7	39.7	20	4	8	51	3	5	7	57	10	353

From observations taken near London during forty-three years, the average day temperature of the week is 46.8°; and its night temperature 34.6°. The greatest heat was 59°, on the 15th, 1868; and the lowest cold 7°, on the 15th, 1853. The greatest fall of rain was 1.24 inch.

ELECTION OF ROSES.



THOUGH I can only reckon myself among those whom Mr. Hinton calls the more modest Rose-growers, I still venture to hope that a few remarks from me on the letter of "SÉNATEUR VAISSE" may make the task of himself and others who purpose taking part in the coming election of Roses a more sure and easy one, and thus be the means of enhancing the value of the votes that may be forwarded to Mr. Hinton in favour of the different varieties.

First, as to the qualification of the electors. It by no means follows that a lack of ability to judge correctly of the merits of exhibited cut Roses, should also imply a want of ability to judge of the quality of the plants from which those Roses were cut. Nor, on the other hand, does it of necessity follow that an expert judge of cut blooms should be also aware of the great difference that exists in the bloom-producing powers of the plants the flowers of which he sees before him in greater or less perfection. The judge must be able to decide between the merits of those flowers, but it matters not to him whether they were cut from strong growers or weak growers, from certain or uncertain openers. He must know the distinctive characteristics of each variety as to wood, foliage, colour, &c.; but it is not necessary that he should be acquainted with the peculiarities which render those varieties of different value to the general cultivator. These peculiarities manifest themselves not necessarily to the judge or to the exhibitor; the one may have the needful amount of knowledge, the other be a skilled gardener, but neither may have taken that personal interest in the propagation and cultivation of Roses which alone leads to a perception of their good and bad qualities as flower-producing plants.

In my own case, for instance, though I should hesitate to undertake the responsibility of deciding between the rival claims of Messrs. Paul's and Cant's show blooms, I still fancy that the knowledge I have gained in propagating my thousand Rose bushes, and tenderly anticipating their wants, may not be without its interest and value to others. I may add, also, that as an exhibitor in a modest way—that is to say, chiefly in this locality, I have met with a very fair share of success, as out of ten collections exhibited during the past season I have been placed first six times, second once, and third twice. Such experience, then, I should say entitles anyone who has it to register himself as an elector, and if he chooses, to forward his vote to Mr. Hinton.

Secondly, as to the candidates. The electors are required to select one Rose pre-eminently as the best for all purposes; then twelve of the best Tea and Noisettes; then the fifty best, distinguishing the best twelve of the fifty, I presume for all purposes.

"SÉNATEUR VAISSE" asks, "What does 'best' mean?" "Best for what?" Mr. Hinton himself supplies the answer—"For all the purposes" for which the Rose is

generally grown. The Rose is grown for the sake of its flowers; the wood and the foliage, though beautiful in themselves, are but a means to an end, and that end is the production of flowers. The more freely those flowers are produced the better the variety; the more beautiful and sweet and lasting they are the better the Rose. Now, it is well known that among the multitude of the varieties cultivated, some as flower-producers are eminently good, others miserably bad. What we want to arrive at, then, is the solution of the question, Which among all the Roses grown will produce the greatest quantity and the best quality of flowers with the least amount of labour?

A continual supply of perfect Roses can only be produced by those varieties which have the following ten qualities:—

1st, *Hardiness*, to stand our climate in winter.

2nd, *Vigour of growth*, that health may be maintained, and flowering shoots freely produced.

3rd, *Good foliage*.—Good, substantial, handsome foliage is desirable, not only for appearance sake, but for health. A thin flimsy leaf is soon torn and disfigured by the wind; and loss of leaves means loss of flowers.

4th, *The wood should not be too thorny*.—This has special reference to the flower stalk. I do not myself expect ever to get perfect Roses without thorns. Most of our thornless ones are also scentless; Victor Verdier and his race, for instance. I would rather have thorns with scent, than no thorns and no scent. Nevertheless, some of our best and sweetest Roses prick one's fingers dreadfully in the handling, and this is not nice. I like to be able to carry my sweet pets in comfort, and to be able to place one in my buttonhole or show tubes without such sharp reminders that there is nothing perfect in this world. All, however, are not so armed; witness Alfred Colomb, Madame Victor Verdier, La France sweetest of Roses, and most of the Teas. Well, why should not they all be so?

5th, *Free-flowering*.—No amount of foliage will compensate for want of flowers.

6th, *The flowers must open well in all weathers*.—Many Roses produce an abundance of buds, but these buds either open badly or else not at all in ordinary weather; such Roses are worthless to the general cultivator. I think, moreover, that it is almost a pity to perpetuate these inferior sorts, even for exhibition—that is, with a view to sale. A magnificent bloom of some uncertain Rose "caught" and displayed in all its glory may add to the attraction of a box, and to a certain extent repay one for the labour and ground required to produce it; but I fancy that the Rose is not the only thing "caught." Many an innocent victim, struck with the beauty of the impostor, orders his half-dozen bushes, from which he is, perhaps, destined to cut not so much as one good bloom for the season. After a number of years' experience nothing has struck me more forcibly than the vanity of trusting to the descriptions attached to the names of the various Roses in the catalogues of those who grow them for sale. Let beginners beware of pur-

chasing a Rose because it happens to be described as "very large, full, and fine form," or "large and full, a splendid variety." Many such Roses, however large and splendid they may be when you get them, may keep you waiting on the tip-toe of expectation all the season to see their fat promising buds expand into lovely blossoms, and after all disappoint you; or else they may give you shoots and leaves without end, but hardly a flower—"plenty of tablecloth, but very little dinner." Many, very many I regret to say, of the Roses to which these alluring descriptions are attached ought to have added, "but a very shy bloomer," or "very uncertain opener," or, again, "very weak in growth." Intending planters would do well to make special inquiries on these points before ordering, or else place themselves entirely in the hands of some respectable nurseryman, stipulating that none but free-flowering and good varieties be sent.

7th, *The flowers must be large and symmetrical.*—By "large" I mean large for a Rose. We not consider a Cabbage large unless it is a foot or 18 inches in diameter; but Roses are not Cabbages, nor are they grown for the same purpose. From 4½ to 5 inches in diameter is, in my humble opinion, quite large enough for such a sweet morsel as a Rose. I do not care for those great overgrown monstrosities like Paul Neron; to me they have exceeded the limits of Rosedom, and fail to excite my tender feelings and admiration. Moreover, it seems that as a rule symmetry must be sacrificed for size, and not only so, but often scent too. All this is a step backward from that ideal of perfection which raisers of new Roses should set before them.

8th, *The colour should be distinct and pleasing.*

9th, *The flower should be sweet-scented.*—Roses without perfume are to me only fulfilling half the object of their existence, however great their beauty. Who can reckon-up the multitudes of noses that have been withdrawn from the delicate petals of Madame Rothschild, tickling with ungratified desire, while the owners exclaimed, "Ah, no scent! What a pity!"

10th, *The bloom in this climate should be continuous* for at least seven months of the year—viz., from April to November. I do not know that we can expect more so far north, but we may wish for more, even though we may have to be contented with less. I have had some very respectable blooms during this third week in November from Gloire de Dijon, Céline Forestier, Safrano, Rubens, Fisher Holmes, and a few others whose names I did not notice at the time; and what some can do, all ought to do.

I would suggest, then, that those who may make a return to Mr. Hinton should divide their voting papers into ten columns corresponding with these ten requirements, leaving room for the names of each Rose on the left-hand side, placing a 3 against such qualities as each Rose possesses in perfection, 2 for second-rate, and 1 for third-rate. By adding-up the total marks gained by each Rose we may thus arrive pretty nearly at the result demanded.

Tested in this way the following Roses produce the best results—viz., Gloire de Dijon, 29; La France, 28; Alfred Colomb, 27; Marie Baumann, 25; Ferdinand de Lesseps, 24; Charles Lefebvre, 24; Comtesse d'Oxford, 23; Madame Rothschild, 23; Camille Bernardin, 23; Madame Victor Verdier, 23; Dr. Andry, 23; John Hopper, 23; Sénateur Vaisse, 23; Souvenir d'un Ami, 23; Maréchal Niel, 23; Mdlle. E. Verdier, 23; Souvenir de la Malmaison, 23; Duchesse d'Orléans, 22; Louis Van Houtte, 22; Prince Camille de Rohan, 22; Fisher Holmes, 22; Général Jacqueminot, 22; Pierre Notting, 22; Jules Margottin, 22; Victor Verdier, 22; Comtesse Cécile de Chabillant, 22; Madame Knorr, 22; Céline Forestier, 22; Duke of Wellington, 21; Exposition de Brie, 21; Reine du Midi, 21; Maurice Bernardin, 21; Centifolia rosea, 20; Princess Mary of Cambridge, 20; Devoniensis, 20; Madame Willermoz, 20; Souvenir d'Elise, 20; Catherine Mermet, 20; Marguerite de St. Amand, 20; Elisa Boelle, 20; Marquise de Castellane, 20; Mdlle. Marie Rady, 20; Mdlle. Bonnaire, 19; Madame C. Joigneaux, 19; Xavier Olibo, 19; Rubens, 19; Antoine Ducher, 18; Abel Grand, 18; Baronne de Maynard, 18; Safrano, 18. The Rose at the head of the list is the best for all purposes.

The best twelve would be the dozen first on the list. The best fifty stand in their order of merit.

The best twelve Teas: Gloire de Dijon, 29; Souvenir d'un Ami, 23; Maréchal Niel, 23; Céline Forestier, 23; Devoniensis, 20; Madame Willermoz, 20; Souvenir d'Elise, 20; Catherine Mermet, 20; Rubens, 19; Safrano, 18; Madame Bravy, 18; Belle Lyonnaise, 18.

SPECIMEN OF TABLES.

Name of Rose.	Hardiness.	Vigour.	Foliage.	Smooth flower stalk.	Free blooming.	Opening well.	Size and symmetry.	Colour.	Scent.	Constantcy.	Total.
Gloire de Dijon	3	3	3	3	3	3	2	3	3	3	29
La France	3	2	3	3	3	3	3	3	3	2	27
A. Colomb	3	2	3	3	3	3	3	3	2	2	23

—R. W. BEACHEY.

[To Mr. R. W. Beachey's interesting communication I have little to add, further than to regret that it did not appear earlier. The lists, forty in number, are being classified—no little labour, when in the fifty nearly 250 Roses have been named: hence for this election it is impossible, but it will be a most valuable guide in any future election, and possibly some of us may like to add one or two more qualifications. One thing I have discovered—that future Rose elections must take place earlier, say in September and October, for the nurserymen are now so busy in selecting them for customers. Imperfect as the election may prove, I fancy we shall most of us learn something from it.—JOSEPH HINTON.]

EARLY AND LATE PLANTING POTATOES, &c.

"A LADY IN CHESHIRE" inquires as to the importance of early planting, and the true reply is, that it must always depend upon circumstances and the unforeseen. Your correspondent says "she will be glad to know what early planting is," and that is a much easier question to answer; yet even that answer must be taken with a grain of salt, for I remember your late coadjutor, Donald Beaton, telling me how he took great pains to force some early Potatoes to sufficient maturity for a Christmas dinner party, and the applause came—"Beaton has sent us up some very good late Potatoes!" I believe my good old friend never more forced young Potatoes to appear upon the dining-table till the clock's hand had gone fairly round the dial on the 1st of January.

The atmosphere which produced those Christmas Potatoes would be required to be about that in which winter Cucumbers are grown, and so on till February; thenceforward till March a temperature ranging between 60° and 70°; and for March and April tubers nothing could be better, I should say, than the method of pot culture "in a vinery not heated till spring," which "A LADY IN CHESHIRE" is in the habit of adopting. Mona's Pride, too, is the very best kidney Potato for the purpose; I should also use for the earliest forcing Turner's Union, round.

When your correspondent mentions "early summer Potatoes and also winter ones," the latter, I presume, meaning tubers to force, and the best time to "start" them, my practice teaches me that if seed is intended for forcing, that seed should be chosen from a previously forced crop when an inclination to start early with earlier productiveness becomes a matter of course. Choose medium-sized whole tubers. Better crops will be produced from youthful tubers than from those of ripe old age.

A point of the first consequence, too, is the treatment which the seed should receive preparatory to planting. It is many years since I first broached the advice in these pages, how often since I know not; but to embrace the full scope of the queries I must beg leave to unfold the advice again. Sort the seed when the crop is being taken up, and single-out the medium-sized sets in preference to the largest Potatoes. From the day that they are taken up keep them in single layers on boards or shelves, or upon any dry surface where they can be exposed to light and air, and provided with instant protection from frost till planting time arrive again. Be very careful at all times not to injure the first and best shoots, and then, probably, but few other "spurs" will make growth; neither will the first shoots do so to more than a certain extent, say to about the length and substance of a lady's little finger, maintaining a greenness and sturdiness even till late autumn under the influence of dryness, coolness, and light, and the shoots will become as firmly attached to the tubers as the limpets to the rocks on the seashore.

A few days before very early or spring planting I take the trouble to gouge-out with a penknife every supernumerary eye and shoot, except the premier one. I repeat "a few days

before planting," because when the delving-out operation is performed at a more remote period the sets are, consequently, liable to become much shrivelled. But when the planting of them is deferred till late in the season, merely continue to disbud—viz., rub off those shoots that will be unnecessary; and neither for very late planting need the disbudded or dormant eyes be made to undergo the gouging-out operation, for the first shoot will then have monopolised so many of the good things which were stored-up in the tuber, that it is a great chance whether the disbudded or dormant eyes will have the power to push at all.

At all times one shoot is quite sufficient to leave on a moderate-sized tuber, with careful planting, in order not to rub it off, and a good three weeks will thus be gained in maturing the crop. When seed Potatoes are made to undergo the above-described process of induration, it signifies little or nothing whether they are "greened" in the sun on the open ground or no—better not.

I have tried several times the system of planting Potatoes in the autumn in this ground, but I found the soil much too stiff for the purpose. The land during the winter becomes solidified to a brick-like tenacity, which no after-forking-over in the spring serves to ameliorate, and the young growing tops find the greatest difficulty, only after performing all sorts of whorls and antics, to push their way through; otherwise, in a light friable soil, and under circumstances such as Mr. Radcliffe pointed out lately on page 376, I have no doubt autumn planting would answer well, more especially for field sorts, such as Paterson's Victoria and Sutton's Red-skin Flourball.

Allow me now to state the results of my Potato experience this season more fully than I had the power to do at my earlier writing in No. 598. Much did I marvel, however, when I read what your worthy coadjutor said at page 399, where he sums-up the Gladiolus and Potato disease by analogy, inferring that "we know nothing at all about either!" I do not know much, certainly, about the former, but if I did I would advise "D., Deal," to take up the bulbs as soon as ever he sees the leaves beginning to turn rusty. All fruit, flowers, and vegetables, whether they grow under or above the ground, depend for their well-being upon healthy leaves; and if from any unnatural check or blight their leaves become stricken and disabled, then the sooner the fruit is gathered, or the bulbs or the tubers taken up, the better. I feel almost certain "D., Deal," will not dispute that. I am not fond of going to war for an idea, but I stand firmly by my old colours—an electrical state of the atmosphere in connection with rain being a chief and first cause in bringing about the Potato disease; and I know that I lay myself open to your batteries by so doing. That cannot be helped; this battle must be fought-out to the bitter end, and facts are stubborn things; they shall bear me up in my sequel.

In the middle of July my new seedling Potatoes induced me to go and stay for a few days in the neighbourhood of Bedford to watch their precocity and other peculiarities. Not a drop of rain had fallen upon them for some weeks, and my supervisor was praying for some to come down. I did not sympathise with him, as my note-book ran thus:—"July 10th, atmosphere becoming very foul and thickening; I doubt the Potato disease is coming sooner than usual this year." In fact, I hinted at the advisability of getting them all up, as most of the sorts were already very nearly ripe; but we had named the day when friends and critics were to meet to admire or pass condemnation upon them, so they were left to their fate and the elements, and I secretly hugged the hope that the already brewing tempests might pass over without wet, for then I knew they would remain without spot; or otherwise that the rain would come without the thunder and lightning, and then they would be equally safe from that which Lady Macbeth cried "out" upon. Well, on the 18th the surcharged clouds could stand it no longer, and on the 19th storms passed over this neighbourhood. But I was forearmed for what I intended to do; so on the very evening I worked till dark, taking up every other "stool" of my choicest proved seedlings from the ridges, and so on for two or three days both in storm and sunshine, till I had secured as many as I wanted of my precious ones. Many of them have since appeared in the Council Chamber at South Kensington, and it was lucky for me that my experience in the ways of atmospheric causes led me to make no delay, as those of their fellows which I allowed to remain in the soil, with the hope of a chance of being afterwards able to show them off in their growing state to my friends, &c., were almost destroyed by the disease,

whilst not a single tuber is lost, or touched with it, of those which I lifted before they became scarcely blotched in the haulm.

Again, as regards my newest seedlings, which I raised from the seed-apples under glass last year, one-third of them I planted during the first quarter of last April in the open garden, and one-third of them, from want of room here, I sent to be planted out at Bedford. In the beginning of July I began to have my suspicions about the disease, so I planted the remaining third part in any spare corners of the garden. Now, I beg of you to judge by the results of these precautions, whether the disease is so profound a mystery as "D., Deal," will have it to be. Of the April-planted lot, which were all of them, as a matter of course, left to acquire their full growth and features, not two dozen tubers survived the murrain. Those sent to Bedford were somewhat more lucky; but of those which I planted in July—the very smallest of the fry—anyhow and anywhere, and which "took to grow" after the atmosphere had become cleared of its electricity, I finished lifting them in the third week of October, a most perfect lot, and surely they have been saturated enough and to spare with mere wet. So, if merely plain rain unaccompanied with tempest will bring the disease, why is it that this last and late-planted third was left scathless? I am most thankful to say that they were; and, as the above will serve to show, by simply guarding myself against that state of the atmosphere, which is sure to arrive sooner or later during July and August, I have saved my credit and as many as I chose of my crops, plus the results of years of experimental crossings for the future.—R. FENN, *Woodstock Rectory*.

NOTES ON DENDROBIUM.—No. 2.

Dendrobium Falconeri, from the mountains of Bhotan, is one of the most lovely and distinct forms of the genus, perhaps the queen of all Dendrobies. Like other good plants, it is found difficult to cultivate by many, but that a few good specimens exist I am well aware. As regards culture, I consider it an exception to the general rule laid down for Dendrobies. In most cases the new growth is produced from the base of that of the previous year; and, as well as keeping up a fresh supply, it continues to lengthen and branch from the older growths; therefore, a plant under favourable circumstances would soon form a well-furnished specimen. The finest I have seen is growing on a block some 2 feet long, filled from top to bottom with branching growths, from 18 inches to 3 feet in length. It also appears to be quite at home on flat pieces of cork, upon which has been placed some fresh sphagnum moss. It is very impatient of being meddled with at the root, therefore it should not be disturbed in the way of shifting, unless really needful. It will grow for years in what seems a small compass for its roots. With regard to moisture, it should have a constant supply. Look at and examine *D. Falconeri* when you may, it is in a state of growth either in root or stem, so that to follow the drying-off system would prove very injurious. Water may be withheld to a great extent when it is not in active growth, but never allow the plant to become dry. Many may be induced to do so in order to obtain a free-flowering habit; rather than do this, place the plant as near the glass as possible, and string the growths in a careless manner with some neat pieces of bass, so that air and light may have free access on all sides. This will greatly aid them in ripening, and thereby induce them to flower. Better to be content with a moderate bloom obtained in this manner, than run the risk of losing the whole plant by drying-off.

D. Falconeri should not be absent from any collection. A plant in flower presents an almost indescribable appearance. The predominant colours are white and purple: petals white tipped with purple; sepals pale rose, also tipped with purple; the lip white, with a liquid mulberry-coloured and golden-bordered recess. It usually blooms in May, lasting about a fortnight in perfection.

D. Wardianum, from Assam, is a very rare and beautiful species, forming a splendid companion to the foregoing, which it somewhat resembles in its knotted stems, although quite distinct, being more robust in its growths, which are pendulous, attaining the length of 2 feet or more. The flowers, produced in twos and threes from the axils, are often 3 inches across. The sepals and petals are white, tipped with rosy purple; the lip, beautiful rich orange with a white margin, having a crimson spot on each side. It blooms in spring and

early summer, lasting from two to three weeks. It is best adapted for growing in a hanging pan.

D. McCarthia, the native Mayflower of Ceylon, is a most desirable species, of pendulous growth, about 2 feet long; its flowers are produced in racemes, bearing three or four of its lovely blooms, some 3 inches across, in shape not unlike those of a *Thunia*. The sepals and petals are extremely pointed, and of a pinkish colour; lip light and purple veined, the recess full purple. Its lasting qualities greatly enhance its value. If kept free from damp it will continue in perfection for five weeks, or longer. A specimen of this has been shown with one hundred flowers, the appearance of which must have been magnificent.

D. Bensoniae, from Moulmein, is a distinct and truly handsome species, with sub-erect growths, 1 to 2 feet in length, producing from near the points its delicate blossoms—two or three together, which are nearly 2 inches across, and snow white; the lip with an orange disc, and two purple spots near the base. It blooms in summer, lasting about three weeks. This is certainly one of the most splendid forms of the Moulmein Orchids, which are both numerous and glorious objects.

D. Devonianum.—Another Moulmein production, in praise of which I cannot say too much. None is more worthy of the attention of all lovers of Orchids. It should be grown in a hanging basket, in which manner its lovely blossoms are seen to perfection; the pendulous growths often attaining the length of 3 or 4 feet, flowering from the points quite half way back. The flowers are of a beautiful translucent white, purple-tipped, with a slight tinge of rose; the lip shaded with bright orange yellow, and its margin delicately fringed. These are produced in May and June, lasting about a fortnight in perfection. This and the preceding will endure a considerable amount of dryness during the resting period.—C. J. WHITE.

WINTER-FLOWERING GERANIUMS.

WHEN John Frost pays us a visit, and by the touch of his cold hand makes our out-door flowers succumb, then is the time that winter-flowering Geraniums will well supply the deficiency, and be highly appreciated and useful. There is no season of the year at which flowers are more coveted than just after the grand supply out of doors has been stopped, ladies especially expecting to have all the vases filled and the rooms decorated the same as usual; then how happy it makes the gardener feel when he knows that he has a "reserve force," which he has been preparing during the summer, and which will do him good service. There is no class of plants more effective and that can be secured at so little expense, for you may cut from them and come again; and now that we have such a number of suitable varieties, and of nearly all shades of colour, they will be of great assistance to the gardener.

For the preparation of the plants for the particular purpose referred to, my plan is to take off cuttings in the spring of sorts that are suitable and that I find flower freely. If I were to give any preference to one part of the plant over another in taking off the cuttings, it would be to the tops of the plants that have bloomed well and are pretty firm in the wood, as I think they are not inclined to make so much gross wood as a cutting full of sap. The cuttings are inserted in 5-inch pots, five or six in each pot, and placed in a pit which I use for propagating in the spring; but they will strike in any ordinary greenhouse temperature. When rooted they are potted-off singly in 4-inch pots in a soil that we have here, which I find supplies all their wants admirably without any addition, except a sprinkling of bone dust: it is a light sandy loam. For potting I have the turf cut about 3 inches thick, and stacked so as to keep it as dry as possible, and for the abovenamed plants it seems to have all the qualities necessary for the production of dwarf, compact, free-blooming plants. I am convinced they would not do so well in the most complicated mixture that we could prepare. After potting, the plants are returned to the pit or any spare frame until they become established in their pots, when they are shifted into 6-inch pots, and they can then be either set out of doors or in a cold frame; the latter I prefer, as it keeps the wet from soddening the soil in the pots. Abundance of air must be given night and day, attention paid to pinching the shoots and picking off all blooms that appear during the summer, and they will make compact bushy plants by the autumn.

When the cold nights and mornings indicate that frost is approaching I consider it time to put our reserve force in

readiness. I then have all the plants placed on the potting-bench; a little of the surface soil is removed, and a top-dressing of some fresh loam, with a little well-decomposed manure, is applied. The plants are then removed to the greenhouse, and air is given every day if possible. If the weather is very dull and damp, a little fire heat will be necessary to keep the air of the house circulating, and to dry up the damp. In a temperature not lower than 45°, nor higher than 50°, they will bloom to perfection. They must be carefully watered now, so as to make as little damp in the house as possible. Some guano in the water twice a-week will be very beneficial, and considerably increase the size of the blooms and the brightness of the colours.

I have found the following varieties very suitable—viz., *Duchess*, *Duchess of Sutherland*, *Excellent*, *Faust*, *Highgate Rival*, *Diadem*, *International*, *Mdlle. Nillson*, *Madame Lemoine*, *Mrs. William Paul*, *Madame Rudersdorf*, *Vivid*, *Lucius*, *Jean Sisley*, *Lizzie*, *Le Grand*, *Rebecca*, and *Leonidas*. These, with others, are at the present time covered with bloom. It would be interesting to many of your readers if some of your correspondents would name a few sorts which they have proved to be useful flowering varieties for winter.—J. ANDERSON, *The Gardens, Hill Grove, Kidderminster*.

THE HOME OF THE APPLE TREE.

WHERE did our eating Apples come from? I am not Darwinite enough to believe our Ribston Pippin ever came from the Crab of our hedges, any more than I believe our Editors ever had monkeys for their ancestors. I was much struck with a passage in a work of George Chaworth Musters' "*Travels in Patagonia*," where he mentions large woods of Apple trees which the Indians visited every year to gather the fruit. These are spoken of as far distant from any settlements of the Europeans. Then, again, Adams, in his "*Wanderings of a Naturalist in India*," writes of the Apples, Apricots, Walnuts, &c., of Cashmere as if he had found them at home.

In spite of the antiquity of cultivated Apples, one often sees writers take it for granted the hedge Crab improved is the source of all our varieties of this useful fruit. Why do they not talk of the time when our cats were tigers? What is the history, as far as known, of the cultivated Apples?—J. R. PEARSON, *Chilwell*.

STORING SOILS.

BEING often obliged to resort to numerous schemes to procure the required quantity and quality of soils for the various uses in the garden, it struck me, on reading the recent article by "R. F.," that a few additional hints, the results of considerable experience and observation, might not be uninteresting to many. It must not be understood that I wish to detract in any way from the instructive way in which "R. F." has put the matter before the public, but rather to endorse more fully all he has said in regard to the stacking of soils, believing that by every additional ray of light that can be thrown on the subject we discharge a duty which may be of importance in guiding young cultivators, at least, to right conclusions.

The practice of stacking soils in huge heaps cannot be too strongly condemned; it matters not whether it be loam of a strong clayey nature, a light sandy loam, or even peat, the practice is equally objectionable in all, and the longer soils remain in such heaps the worse they become, in my opinion. Look, for example, at a heap of strong loam where a quantity has been cut down for use, and the face of the remaining heap left undisturbed for, say, three weeks or a month, and not exposed to the direct rays of the sun; such a heap will invariably be found to produce a green scum over the entire surface, showing unmistakably the stagnancy of the mass, and how unfit it is to use for potting either Cucumbers or Melons, or for Vine-growing. Better to procure and char supplies as required from the trimmings of lanes and wayside commons; or if light loam be subjected to the huge-mass treatment, the chances are the whole of the fibre becomes speedily decomposed, or, maybe worse, it may be taken possession of by some deleterious fungus spawn. To attempt anything like high cultivation with such soil is subjecting the cultivator to great disappointment and discomfiture, as the plants (or trees, or whatever may be planted in it, refuse to grow, and can only be induced by a great amount of coaxing to drag out a miserable existence. Not long ago I was requested to give an opinion as to the suitability of such a heap for Vine-growing purposes.

I at once dug into its midst, and found it to contain masses of spawn very much resembling, both in appearance and smell, the spawn of the common Mushroom; it was accordingly condemned. I was afterwards shown a Vine-border made from the same heap about six months previously, and a houseful of Vines planted in it; but with all the coaxing imaginable they could only be induced to make canes the strongest as large as a goosequill, and at the time of my visit (end of September) the Vines were badly ripened and leafless, with dark fungoid spots at intervals all over the bark.

This is one of the reasons why I wish to direct the attention of young cultivators to the subject—namely, to stack soils of all descriptions in narrow ridges, and particularly at this time of the year, when frost may be expected to exercise a very beneficial influence. It has been my practice for some years to stack all such soils, when they can be had, in the form of turf pits, building the walls from 12 to 16 inches thick, front walls $1\frac{1}{2}$ foot, back walls $2\frac{1}{2}$ feet high, in parallel lines about 6 or 7 feet apart. These pits are half filled in spring with fermenting materials, and thousands of bedding plants are kept there until the final planting-out, when it is found the turf has been “cooked to a turn” for almost all kinds of potting purposes. This mode of preparing soil or sod may commend itself to many, from the fact of its having done duty during the process of preparation.—W. MUIR.

SCARLET-FLESHED MELON EMPRESS EUGÉNIE.

In “Jottings of this Year’s Gardening” Mr. Abbey wishes some of your correspondents to name a good scarlet-fleshed Melon that will not crack in a dung frame. I recommend Empress Eugénie. This year I thought I should like to have some large Melons, and I had two plants in a two-light frame, and allowed one plant to ripen one fruit, and the other two fruit. The single Melon weighed 9 lbs., and the two on the other plant were respectively 6 lbs. and 7 lbs., and there was no sign of cracking in either, yet I think the past year has been a very good test, so far as wet has been concerned, to try their cracking propensities. Malvern Hall is also a first-class early variety of the Melon, but does not attain the size of the above. These two varieties are free setters, and have good constitutions—recommendations which the scarlet-fleshed Melons do not always possess.

I am sorry I cannot recommend a better late Strawberry than that mentioned; but as Mr. Abbey is to discard Black Prince, I think he would find a superior substitute in Dr. Roden’s Early Prolific, which is a first-class early Strawberry.—J. ANDERSON, *The Gardens, Hill Grove, Kidderminster.*

GLAZED GARDEN STRUCTURES.

“THE future of English gardening will be more and more under glass.” This has been my idea ever since the duty on glass was repealed. I have just erected a glass shed in imitation of Mr. Foster’s described last year. Mine is 60 feet by 12 feet, wired like a vinery, but for the growth of Apricots. The continued success of Mr. Foster’s shed is enough to induce anyone to build such a structure. The failure of Apricots on the open wall was last year almost universal. Mr. Gadd, of the Wollaton Gardens, told me they had not three dozen Apricots from all their extensive walls, whilst other gardeners in this neighbourhood say they have not gathered a single fruit. From two small trees which have been loaded—I should have said overloaded—for three years previously, Mr. Foster gathered this year twenty-five dozen fine fruit. With the exception of the first year, a very dry hot season, when each tree received a bucketful of water once, these trees have never once been either watered or syringed; the foliage has always been large, clear from red spider or other insects, and the fruit clean and bright as Oranges. Can anyone doubt that the proper mode of Apricot culture has been discovered?

Let us now turn to the Peach. What success has attended its culture on open walls in the past season? Can many persons boast of large crops or good-flavoured fruit? I have an orchard house 90 feet by 30, more than half filled with young trees for sale, and though much fruit was eaten by my family, friends, and visitors, I sold 163 dozen of fine fruit out of it. This fruit was sold wholesale at 6s. a-dozen, a pretty good proof, taking into consideration the profits fruit-sellers require, that it was of good quality. I know no work so disheartening

as to train, nail, prune, syringe, shade, &c., Peach trees on the open wall, though well aware all the time that there is no chance of good fruit more than once in five years, which is about the average in this neighbourhood. Surely a gardener’s time might be better employed, and the walls used to better purpose. Are late Pears so little valued that a south or west wall should be considered too good for them? Is a Green Gage, a Golden Drop, or Reine Claude de Bavay Plum, so poor a fruit that any east aspect should be considered good enough for it? If people cannot afford a house for Peaches or a shed for Apricots, it is no reason their best walls should be wasted in their attempted culture.

No doubt there are persons living in favourable situations, blessed with a fine climate and good soil, who will take exception to my remarks. To such persons I do not refer, yet think even in such cases they might more profitably employ their Peach walls. It is not in man’s power to command success, but where a large outlay is yearly incurred, success should be as nearly certain as possible, and this in the culture of Peaches and Apricots can only be attained by the use of glass.—J. R. PEARSON, *Chilwell.*

GODWINIA GIGAS.

THERE is now in flower at Mr. William Bull’s, King’s Road, Chelsea, one of the vegetable wonders—the Godwinia gigas. It is the first time it has bloomed in this country. The individual flower, or properly spathe, is nearly 2 feet long, by $1\frac{1}{2}$ foot in circumference, and produced on a stem only 18 inches high.

This Aroid was thus described in our seventeenth volume, page 396. “This extraordinary plant, which has proved to be the sole representative of a new monotypic genus of plants, has been figured in the ‘Journal of Botany,’ where a detailed description may be found from the pen of its discoverer, Dr. Berthold Seemann. It is allied to the genus Dracontium, but differs from that genus in having twice as many stamens as perigonal segments. It produces but a solitary leaf, this one leaf with its petiole being some 14 feet in length. When the leaf has quite died down the flower appears, after the manner of the Colchicum of our meadows, but the flower of this giant Aroid measures 2 feet in length, and 1 foot 8 inches in breadth. The leaf of the plant figured attained a height of 7 feet in two months, the leafstalk acquiring a circumference of 9 inches. The same plant ultimately attained the dimensions of the Nicaraguan plants. The leafstalk has a beautifully mottled metallic surface, brimstone yellow in colour, barred and striped with purple, looking, says Dr. Seemann, ‘like a snake standing bolt upright at the command of some eastern charmer.’ It was discovered in January, 1869, near the Javali Mine, in the Chontales Mountains of Nicaragua, and is altogether the largest Aroid of which we have any knowledge. Its flowers emit the odour peculiar to many Aroidæ. The base of the spadix, preserved in spirits in Central America, is now in the herbarium of the British Museum.”

WARNING IN HEATING.

THE following is a recent episode in my horticultural experience; and if you think there is anyone so stupid as to need the caution, you are at liberty to print it.

Finding that through the fierceness of the draught the heat was unmanageable in a new flue, the lower half of which was formed of the usual square tiles and the upper or farthest part of 9-inch drain-pipes, I enclosed some of the latter in a sort of trough or bin, and filled-in with sawdust. This, I imagined, would carry off from the house some of the extra heat, and, serving as a reservoir of warmth, would give me a permanent hotbed for raising plants from seeds and cuttings. For a few days, while the sawdust continued damp, success seemed complete; but during one of the gusty nights we have lately been favoured with, the material caught fire throughout the entire length. On examination, the layer next the stoneware pipes proved to have been converted into a sort of fine charcoal, which, while only smouldering itself, was able to set the rest in a blaze, which was soon communicated to the wooden bin, and thence to the stand above and the shelves within reach. The circumstance that much of the surrounding work was of oak and elm unpainted, no doubt prevented the destruction of the entire house and the adjoining ones. As it is, the downy-leaved plants, as Primulas, Cinerarias, and Gera-

niums, have been destroyed by the smoke, while the smooth-leaved Camellias, Azaleas, &c., have escaped, except where scorched by the actual flames. Amongst the latter was a fine plant of *Solanum*, whose berries were cruelly roasted, and "alas! master, it was borrowed."

The accident took place too far from the furnace for any actual fire to have been communicated, even if the pipes had not been perfectly tight; and it shows how a low heat, certainly never approaching that of boiling water, is able to get accumulated in woody fibre, and to cause it to enter into what can only have been a state of spontaneous combustion.

I may add that I do not intend to give up the idea of such a permanent hotbed, but shall, of course, cover the pipes with sand or earth, on which the surface material, whether sawdust, tan, or cocoa-nut fibre may, perhaps, be safely placed.—T. S. C., *Bristol*.

IONOPSIDIUM ACAULE.

How dull and cheerless just now is the aspect of garden and flower ground! Outside stove or conservatory the eye wanders in vain for any object of floral interest, unless, perchance, it may rest upon some pale solitary Rose or other unseasonable struggler, which only serves to make the floral solitude more lonely, and the decay and sleep of nature felt more sensibly. Amid this desolation and quiescence of plant life, it is, to anyone who can feel and appreciate it, an agreeable surprise and a joy to come upon a hardy little plant-beauty which, at this inclement season, all healthy, verdant, and vigorous, puts forth its modest charms in the shape of flowerets innumerable, and continues to do so far into dreary winter. Such a hardy little gem is to be found in the lowly cushion-like violet Cress of the south of Europe—*Ionopsidium acaule*. From its neat low-growing habit it is also sometimes called the Carpet Plant, and in suitable situations it, no doubt, is well calculated, with such things as *Arenaria balearica* and the Sedums, to play a part on that recent and somewhat fashionable phase of modern flower-gardening yecept "carpet bedding." Individually a plant of this pretty little Crucifer (flowers, leaves, and all) may be covered by a florin, and yet in that small compass are leaves innumerable and flowers in profusion. The leaves are deep green, roundish or somewhat reniform, and compactly arranged. The flowers, which are produced in great abundance and continuous succession, are of a delicate pale violet or lilac tint. Collectively the plants assume the appearance of a dense green cushion, with its surface thickly powdered over with delicate, pale, tiny lilac flowerets.

A small bed of this plant is at this season a very pretty and telling object, and as it also does very well grown in pots, anyone who goes-in for or is fond of window gardening could not take under his care a more interesting or pretty subject. Its place in the garden is a bed or border with a north aspect, or it will be quite at home on the shaded side of rockwork. The soil most suitable is that of a peaty character. It is an annual, and flowers in a very few weeks after the seed is sown. Once established it seeds abundantly, sows itself, and comes up freely, so that it assumes a perennial character. In the American garden at this season our plant might be made very effective use of by stringing the beds with small bosses of it at short intervals. If, however, we can but induce our practical friends to make the acquaintance of this charming little hardy winter-flowering plant, it is enough for us; its whereabouts and combinations may be safely left to their good taste. Our object simply is to draw attention to it, and ask for it the place which it appears to us to deserve among the materials available for the floral decoration either of the winter and spring garden, or the dwelling-house window. Seed of it may be sown either in autumn or spring. When sown in the latter season it soon flowers and ripens its seeds, which, shedding quickly, germinate and produce a crop of plants which flower in autumn and continue to do so through a great part of the winter. In this way it is almost perennial in habit and perpetual in flowering. Though far from being a new plant, it is neither so familiarly known nor extensively grown as it certainly deserves to be.—(*Irish Farmers' Gazette*.)

ICE-PLANT SEEDLINGS.—In reply to "A. R., *Bromley*," I am in the habit of sowing Ice Plant on the outside of Cucumber and Melon frames, where it flourishes well, and has more than once flowered abundantly. In the warm summer of 1868 it must have ripened seeds in open flower beds, for the following year numerous seedlings sprung up, I having planted-out

a few of the spare plants from the outside of the frames in those flower beds, where they became fine plants, and must, of course, have flowered, although I did not notice the fact. The blossom being so insignificant, this is not surprising. I may add that this situation is 450 feet above the sea, and near the mountains of North Wales. The sea air so tempers the climate that we have very little frost or snow.—C. R.

COLOUR CLASSIFICATION OF ROSES.

MR. RADCLYFFE's attempt to classify Roses by their colours only shows how utterly useless it is to attempt it, and that "SÉNATEUR VAISSE's" plan as an emendation to Mr. Hinton's was no emendation at all. Mr. Radclyffe classes Roses in twenty-seven colours. What his object is in recommending such Roses as *Céillet Parfait*, *Tricolor de Flandre*, *Madeline*, *La Volupté*, *Madame Jacquier*, *Gloire de Ducher*, *Empereur de Maroc*, *Schismaker*, and a few others, I hardly know, unless it was for the sake of dividing-out colours and having a motley group of all shades. How, again, could *Madame Boll*, *Felix Genero*, *John Hopper*, *Madame Clémence Joigneaux*, and *Duchesse de Morny* be all classed under the same head as rose colour, under which head, by the way, he has fifteen names (it having been suggested by "SÉNATEUR VAISSE" to name three)? How, again, can *Duke of Edinburgh* and *Fisher Holmes* be classed together as scarlet? If *Fisher Holmes* is to be associated with any other Rose in point of colour, it must be with *Charles Lefebvre*, not with *Kean* or the *Duke of Edinburgh*. However, it is unnecessary to criticise further, as all good judges of Roses, and amateurs who have studied the question of the colours of Roses, will see how very far short of any accurate classification Mr. Radclyffe's list is. Besides, to go no further, in naming about seventy-five Roses he has omitted such Roses as *Marie Baumann*, *La France*, *Emilie Hausburg*, *Madame Noman*, *Louis Van Houtte*, *Countess of Oxford*, *Horace Vernet*, *Berthe Baron*, *Abel Grand*, *Mlle. Eugénie Verdier*, *Duke of Wellington*, *Dupuy-Jamain*, *Princess Mary of Cambridge*, *Victor Verdier*, *Madame Caillat*, *Mrs. C. Wood*, *Madame Thérèse Levet*, and many others I could name, while putting in, besides those I have picked out before, such Roses as *Sœur des Anges*, *Lion des Combats*, *Baronne Pelletan de Kinkelin*, *Baron Chaurand*, *Souvenir de W. Wood*, and many others not worth nearly so much as those he has omitted.

I should not have made these adverse criticisms, but such a list as Mr. Radclyffe's, coming from a reputed judge, is apt to mislead the gardening world, and I must make a protest against it. Mr. Hinton's list, which I hope shortly to see published, will, I think, verify what I say in regard to those which have been omitted from Mr. Radclyffe's list and those which have been inserted.—C. P. PEACH.

TEACH CHILDREN TO KNOW PLANTS.

CHILDREN of two families met in a Hampshire lane, and one of the children was gathering from the hedge some berries and giving them to her sister, observing—"They must be good, they look so nice." "No! no!" exclaimed a daughter of the other family, "they are poison. They're called Deadly Nightshade. Papa told us so when illustrating a proverb—all is not gold that glitters."

"I hope mamma will not die," said a seven-year-old maiden; "but if she does die, I hope she will die like a flower, and come again in the spring."

Now, those utterances—sentences truly uttered, and now truly told—were teachings from Nature, were lessons learned from Nature, and her lessons are among the most useful and last to be forgotten.

One of the first instincts of childhood—a love of the beautiful—should be cherished, for it is the first step towards goodness, and there is no beauty on earth so pure as that of plants.

"Beautiful things ye are, where'er ye grow!
The wild red Rose, the Speedwell's peeping eyes,
Our own Bluebell, the Daisy that doth rise
Wherever sunbeams fall or winds do blow;
And thousands more, of blessed forms and dyes—
I love ye all!"

Take a child along a country lane, and gather sprays of any or all the plants as you walk, and you may teach that child lessons in brief sentences that will never be forgotten. The Crab, parent of every Apple; the Briar, nurse of better Roses; Ivy that adorns and shelters its supporter; Coltsfoot, Ground Ivy, and many more—the poor man's medicines; Grass, the

most refreshing garb of the world. Gather any flower, and point to the pistils and stamens—parents of all seeds; petals that adorn, and calyx that sheltered them all in their infancy. Such lessons add an interest to every ramble, and we know a man who told “all about some one plant in each stroll he took with children,” and one of those children who now loves to be among flowers, and write of their history and ways, traces the growth of that love to the lessons learned in those strolls, and he has had them brought back to memory by a little volume, entitled “Buds and Blossoms.” All its tales are good, but he especially is pleased with “The Story of a Daisy,” “The Blackberry Gathering,” and “The Fir Tree’s Story.” He commends the little volume to all parents. It is published by Messrs. Groombridge & Sons, and is rendered further attractive by its illustrations.

HOTHFIELD PLACE,

THE RESIDENCE OF SIR HENRY TUFTON, BART.

One day in the early part of September, having an hour or two to spare, I paid an unexpected visit to this pretty place, which has for years enjoyed the reputation of being one of the most skilfully managed and best kept in Kent. I reached the place by a cross-country road; but for the guidance of those who may wish to make a call, I will say that Hothfield, a small village, is distant about three miles from the important and thriving town of Ashford, where both the South-Eastern and London, Chatham, and Dover Railways have stations. The landscape scenery in this locality is grand, and there are several gentlemen’s seats in the neighbourhood. Near it, too, is Eastwell Park, at present the residence of the Duke of Abercorn.

Hothfield Place is situated at the extreme end of the village, coming from the turnpike road. On reaching the entrance gates, near the gardens, on the left-hand side is the gardener’s house, which is quite a model house for a gardener. It is of noble appearance, extremely convenient, and forms a suitable introduction to this beautiful domain. I was fortunate in finding the head gardener, Mr. Durey, at home, and from him I received a hearty welcome. After passing by several sheds, storerooms, and potting-houses, we entered the kitchen garden on the right—a piece of ground nearly level, and four acres or more in extent, enclosed by brick walls 12 feet high and nearly 2 feet thick. The garden is divided into two by a cross wall of the same height and thickness as the boundary walls. In the upper garden are the vineries and Peach houses, the former four in number, large and convenient for their purpose, and in capital order. There have hitherto been no inside borders, but this improvement Mr. Durey has lately carried out; and as the old Vines were all planted outside and nearly worn-out, young Vines have been planted inside throughout the range. Seeing that the raising of young Vines under the growth of old ones is anything but desirable, I must say that they were all in a very satisfactory condition.

There being no regular house for greenhouse plants, they have to be grown in the vineries. In No. 1, from which the Grapes had all been cut, were excellent specimens of *Cycas revoluta*, *Rhynchospermum*, *Euphorbias*, *Acacias*, and *Palms*, also a grand plant of *Eugenia Ugni* loaded with fruit: this plant was exceedingly ornamental. There were also *Carnations* for winter flowering, as well as a stock of *Eupatorium ageratoides* and *Stevia Lindleyana*, both light-flowering plants for winter decoration. They should be more extensively grown by gardeners, as they last so long in bloom, and may be placed out of doors in summer. In vineries Nos. 2 and 3 were most excellent crops of the usual sorts of early and late Grapes. No. 4, I think the largest house of the four, was at this time used more as a plant house, for there were five Orange trees in fruit, and a very select stock of the *Celosia* or Feathered Cockscomb, both red and yellow, *Statice profusa* and *Halfordii*, *Ferns*, &c. Mr. Durey called my attention to a seedling zonal *Pelargonium* after the style of Madame Rudersdorf, but with the colours much more distinct and brighter, better shape, and almost a Nosegay in size of truss—a very attractive and useful sort indeed.

Before leaving the vineries I may mention that Mr. Durey is no advocate for barking the Vines after pruning to the extent that some do. He believes it to be very injurious to them, and I quite agree with him. His practice is to take off the loose bark once in two years and then wash the Vines with Gishurst compound in water, but he never paints them as is usual in many places.

Coming next to the Peach houses, two in number, the health, vigour, and large foliage of the trees were very remarkable. In the first house was one of the finest plants of *Statice Halfordii* I have ever seen. In front of these Peach houses, outside, there was a numerous collection of Alpine plants, all named, and arranged upon the rockwork in a most careful manner, according to their habit of growth, by Mr. Durey.

On each side of the walk in front of the vineries, also on both sides of the broad walk through the centre of the garden, bedding plants were arranged in various fancy and tasteful designs; but the severe frost that occurred a few days previous to my visit had so demolished the effect that it was impossible to do more than judge that there had been a very attractive display.

Passing into the lower kitchen garden, on the left-hand side I found a very complete arrangement of Pine houses and forcing pits. There are seven ranges, each from 80 to 100 feet in length and of various sizes. Most of them were heated by hot water. These may be called the working places of the whole garden establishment, and it is wonderful what a quantity of garden produce can be brought to perfection in such pits. Mr. Durey seems to be quite alive to the importance of such places, for in various divisions there were quantities of Dwarf Kidney Beans in two or three stages of growth; late Melons and Cucumbers, and quantities of *Fuchsias*, *Primulas*, and *Cinerarias* for winter and spring blooming; while in the larger structures were to be seen excellent examples of *Heaths* and *Azaleas* in perfect health and well set with bloom-buds. In other compartments there were numbers of choice *Ferns* and fine-foliaged stove plants in small pots for house decoration. The next pit was 12 feet wide, and was occupied with three hundred Pine plants of sturdy habit, healthy and clean. The largest structure of all, which is 14 feet wide and hip-roofed, and which is called the fruiting Pine stove, was at this time occupied with a varied collection of fine-foliaged and flowering stove plants. The *Crotons* were particularly attractive in colour. There was also a large specimen of the lovely *Cyrtoceras reflexa*, with numerous trusses of its waxy-white singularly shaped flowers. I have never to my knowledge before seen this plant in such perfection, and many others have said the same. If I remember aright, Mr. Durey promised to describe to the readers of the Journal his method of growing this plant, and which, I am sure, will be appreciated by many gardeners. There were *Ixoras*, *Clerodendrons*, *Gardenias*, and *Marantas*, alike in perfect health and general condition.

Having now noticed the principal features in the glass department, we took a walk round the kitchen garden, which is well stocked with admirably trained fruit trees and vegetables in proper successions. In the lower part of the garden, however, there was what appeared to be a vacant piece of ground laid-up in ridges as if for winter, but with a much smoother surface. This, I was told, was the Potato quarter. On inquiring about the Potato disease, Mr. Durey said it was very bad in the neighbourhood, but he had not found it in the tubers he was digging-up for use. His plan is to earth the Potatoes in the usual manner when growing, but when the disease first strikes the haulm he has it drawn out of the ground, leaving the Potatoes there. After this, if the weather be fine, a good coating of quicklime is thrown over the ridges, and the rows earthed-up again in as sharp a ridge as the soil can be made to form. He does not dig-up his crops till the latter part of the season. Mr. Durey has treated them in a similar way for some years, and he says that his crops have never seriously suffered from disease. To show me the quality of his crop several sorts were dug-up, and certainly nothing could be more satisfactory.

Leaving the kitchen garden by the compost yard, and passing under a fine avenue of Elm trees, we come to what will one day be an interesting feature in the pleasure ground—that is, an avenue of *Deodars*. At the farther end of this is a very large collection of hardy *Ferns* arranged upon rockwork in a very tasteful manner. This fernery and the *Deodars* are an addition and improvement lately carried-out by Mr. Durey. Retracing our steps, and crossing the road towards the mansion and principal pleasure ground, there are before us some thriving plants of *Wellingtonia*, and two very handsome and large specimens of *Thuja aurea*, quite 8 feet high and nearly as much in diameter, in perfect health and shape. Next I passed over a large and broad expanse of a beautiful and well-kept lawn towards the south front of the mansion, which commands an extensive view of the surrounding country as

well as the picturesque and undulating surface of the park. I then reached the newly-laid-out flower garden, very pretty in design, but the severe frost before spoken of had told its tale upon the occupants of the beds in such a manner that it is impossible to describe the planting. The lawn enclosed in this direction has lately been very much altered and improved. Old shrubs and trees have been cleared away, and views opened-out to some distant object in the park; likewise the choicest of the Coniferae on the lawn have been greatly benefited by this alteration. Each occupies a place befitting its grandeur. This alteration has added to and materially improved the appearance of the mansion. To the north stand handsome specimens of *Araucaria imbricata* and Cedar of Lebanon, a magnificent specimen of *Pinus macrocarpa* 50 feet high, and about 30 feet in diameter 6 or 8 feet from the bottom; also many other species of excellent promise. Near this was a plant of the Pampas Grass, with from sixty to seventy flower spikes upon it. These and many other things connected with the pleasure grounds which I have not space to mention, and the improvements that have lately been made in this part, as well as others in contemplation, will make Hothfield Place more and more interesting year by year.

Leaving the pleasure grounds, Mr. Durey took me to his office, where he had in excellent keeping half a dozen Smooth Cayenne Pines; two or three of them weighed 7 lbs. each, perfect in shape, with the pips well filled-out. In one of the pits in the garden there were also a number of fruit of the Ripley Queen Pine in various stages of ripening. After this, my long journey home compelled me to make an early start, otherwise I should have gone to inspect the improvements that have lately been made for supplying the gardens with water. I found Mr. Durey courteous and obliging in anything I wanted to know, and I was very pleased to find the place everywhere maintained the reputation it has for cleanliness and order. Mr. Durey has long been known as a skilful and intelligent gardener, which has not only been proved by the inspection of his place, but his name is very familiar as a successful exhibitor.—THOMAS RECORD.

AUTUMN-PLANTING POTATOES.

I ALWAYS plant my main crop either the last week in October or the first week in November, according to the weather, and the result is, I am not troubled with any diseased tubers, and they are of a better flavour than those planted in the spring. I plant them 6 inches deep, and 18 inches apart each way. I always have the ground in readiness as soon as convenient. When planting time arrives I stretch the line across the ground; at the proper distance for the sets I have a good spit of earth taken out with the spade, half fill the hole with leaf mould, and then put in the sets. I next cover them with the soil I took out. In this way I have splendid crops of Potatoes. I generally put a slight covering of litter over the ground to prevent any severe frost reaching the sets.—H. H.

WINTER-BLOOMING ACANTHADS.

THAT so few grow these plants is much to be regretted, and I am perfectly at a loss to understand why they have to such a great extent slipped out of cultivation. True, they are not very fitting subjects for the exhibition table, but then every grower of plants is not a public exhibitor. To what, then, can we attribute the absence of these free-flowering and beautiful plants from our stoves? Not to want of grace or variety of colour, not to any difficulty attending their cultivation, nor to their paucity of flower, for their true character is the reverse in all these respects. In the absence, then, of any just grounds of complaint, and believing the order has been very badly treated both at the hands of amateurs and professional gardeners, I shall endeavour to win back the allegiance of some of the deserters, and enlist some new lovers to these highly ornamental plants. The first I shall notice is—

DIPTERACANTHUS HERBSTII.—This is a very beautiful plant, well deserving the attention of everyone possessing a stove or intermediate house. It is a plant of free growth, and with a little pains may be grown into handsome little specimens in a season. Longer than one year I should not advise this plant to be grown, because cuttings are easily struck, and the one-year-old plants are much the handsomest, and produce the finest and most numerous blooms. The leaves are opposite, oblong-lanceolate in shape; the upper surface is dark green, having a white stripe on each side of the midrib, whilst the

lower side is of a uniform purplish red. The flowers are produced in the greatest profusion during the whole of the winter; they are tubular, some 4 inches long, the tube being delicate rosy purple, and the limb white. The plants should be potted in a mixture of about two parts peat and leaf mould, one part good loam, and one part sand. Let the whole be thoroughly incorporated; but neither for these *Acanthads*, nor, indeed, any other plants, should potting be attempted when very wet. After potting place them in a moist atmosphere. The temperature of a cool stove or intermediate house will suit them admirably. A liberal supply of water, and occasionally stopping the shoots, in order to encourage the growth of laterals, are all that is necessary for the formation of bushy little plants for blooming in winter, at which season they will produce for some time a charming effect in the drawing-room or boudoir—that is, if not subjected to the baneful influence of gas light. It is a native of Brazil.

ERANTHEMUMS.—These plants need treatment nearly similar to that necessary for the plant above-mentioned, but will, perhaps, require more attention in the way of stopping to produce good plants. When in bloom they are very elegant, and they continue to produce their chaste and beautiful flowers through the whole of the winter months.

E. ASPERUM.—A slender-growing plant, whose branches are clothed with narrowly-ovate dark green leaves, which are some 2 inches in length. The flowers are produced in clusters from the axils of the leaves; the upper lobes are pure white, freckled and spotted with purple, whilst the lower portion is wholly deep purple of a rich velvety appearance. It is a most elegant plant for winter, and should be extensively grown. Native of the South Pacific Islands.

E. COOPERII.—This is a much stronger and larger-growing plant than the last, but equally beautiful and effective; indeed, with a little care only, a handsome shrub may be formed, which, when covered with its delicate flowers, presents a charming appearance. The leaves are about 3 inches long, lanceolate, with toothed margins, and deep green in colour. Like the other species, the flowers are produced from the axils, and are pure white, beautifully freckled with continuous lines and dots of velvety purple. It remains in flower for several months during the dullest season of the year. Native of New Caledonia.

E. ANDERSONII.—As a species, this plant is probably very nearly allied to *E. asperum*, but for winter decoration it is both very distinct and beautiful. The flowers are produced on good-sized spikes, and a well-grown plant is a very attractive object. The upper portion of the blooms is pure snow white, as also is the ground colour of the lower lobes, over which are diffused crimson dots; but as the margin is not dotted or spotted, it leaves a marginal line of white, which is very effective.—EXPERTO CREDE.

IS GALVANISED WIRE INJURIOUS TO FRUIT TREES?

HAVING received some inquiries respecting the use of galvanised wire for the training of fruit trees and plants, I think it best to give my experience and opinion publicly in this Journal, as I believe there are many, besides those who inquired of me, who entertain a strong objection to its use. From what I can learn, the prevailing opinion with those who object to its use is, that the bare metal has at certain times a sort of galvanic effect upon the branches of such tender subjects as Peach and Apricot trees, so as to cause the disease called gumming in the wood. It may be so, but in all my experience of the use of galvanised wire of different sizes, both under glass and in the open air, I have failed to discover, when a case of gumming has occurred, that its origin could be attributed to the galvanic action of the wire. It may accelerate the evil after the wound is created, but I am not so certain about that, and believe that in most cases, I will not say all, gumming is brought on in the tying and training of the trees. Mind, I am alluding to wire-trained trees only. It is well known that Peach, and especially Apricot trees, are very susceptible of the gum disease, and in some rich retentive soils, where luxuriant growth occurs, more particularly so. It is as well known that the bark of the young shoots is as tender, and perhaps more easily injured than that of any other hardy fruit tree grown in this country; therefore the process of tying and training the branches to wires is one of the delicate operations in their treatment. If the shoot when tied press too tightly against

the wire, it is a great chance if it be not bruised; or if the matting become tightened by the swelling of the wood, so as to enter the bark, gumming will most likely follow. Again, all loose shoots that are not secured against being continually moved by the wind will most likely become bruised, and gummy exudations will shortly be seen coming from the wound. In the growing season all trees so trained, more especially fast-growing young trees, should be looked over every week in order to guard against all the evils above alluded to; and I believe it matters not whether the wire used be galvanised or plain common wire, the same results may be expected if proper attention be not paid to the trees. Some people are accustomed to give the wire a coat of paint every season, even though it may be galvanised; but I have never discovered that it is to any extent a preventive against the gumming of the trees. I should like to hear what others say about the use of galvanised wire for fruit trees.—T. RECORD.

HISTORICAL NOTICE OF THE VINE.

It must have been in the east that the culture of the Vine first took its origin. The hieroglyphics of the ancient Egyptian temples show us that the making of wine dates back to as far as six thousand years from the present time. Vintage and wine-making scenes are still to be found in the tomb of Phtah-hatep, situated in the necropolis of Memphis, which were depicted under the fifth dynasty, or about 4000 B.C. They are in "bas relief," and represent the cutting of the Grapes, and the trampling of them in the wine-press in order to extract the juice. The picture is terminated by a man in a drunken condition, which shows that even at that early period wine was not always partaken of in moderation.

In the other vintage scenes, reproduced by Champollion, are portrayed the cultivation of the Vine on wicker frames, the gathering of the bunches, the system of watering employed in those days, the trampling of the fruit by men, held up by a cord attached to a transverse beam supported upon two forked props, and finally, those untrustworthy vintagers who, in a drunken state, are receiving the persuasions of the *bastinado* in the presence of their master. Champollion also tells us, that at a feast celebrated at Alexandria, 284 years before the birth of Christ, on the occasion of the accession of Ptolemy Philadelphus to the throne, a chariot in honour of wine was included among those which formed part of the procession. It was a four-wheeled one, 20 cubits long and 16 broad, and was drawn by a team of three hundred men. In the middle was constructed a wine-press full of Grapes, which sixty satyrs trod, singing at the same time the wine-pressers' song to the accompaniment of the flute and other musical instruments. In this ceremony were also many children, who carried vessels for serving-out the wine, of which twenty were gold, fifty silver, and three hundred of variously-coloured enamels. Vines were often trained to wicker trellises, and were very regularly watered and tended during the time of the ancient Egyptians. Those used for the purpose of wine-making were in general the ones which remained over after the daily wants of the possessor had been satisfied. When cut they were carried in baskets to a tub placed between two Date Palms, where they were immediately trodden out by men, supported by a rope which hung from one Palm tree to the other, or by means of the appliance we have noted above. The offering of wine is often delineated in the representations of religious rites. It is here seen shut-up in large jars, which are firmly closed-up and ranged along the cellars.

The production of cooked wine is also figured upon the monuments of ancient Egypt. The Grapes are placed in a large pot hung over a lighted furnace, and when sufficiently boiled the must and dregs are put into cloth, through which the clarified wine escapes into jars on the application of a strong twist given to the cloth by means of levers moved by hand-power. In another hieroglyphic the wine-press is in the form of a square tub, above which is a beam placed upon two forks. From this beam are hung strips of wood between which the Grapes are crushed, or bands of cloth in which they are pressed.

Dion reproaches the Egyptians with being great bibbers. The class which was prevented from drinking wine on account of their poverty, indulged in a kind of barley beer mixed with a bitter infusion of Lupin. Aristotle used to assert that those who became drunk with wine fell forwards, whilst those who got drunk upon beer fell backwards. Athenæus declares that drunkenness can be combated by eating boiled Cabbages. In

ancient times the priests used to oppose the cultivation of the Vine, and tried even to put a stop to it. What justifies this feeling of the priests upon the dangers likely to result from the abuse of wine under a climate such as theirs, is, that the most part of the North African people had adopted this measure long before the birth of the Prophet. The Egyptian priests contended that the use of wine prevented the wise men and philosophers from making discoveries, and that is why the Egyptian priest Calasiris, who played such a large part in the story of Heliodorus, refused constantly to drink it. This way of thinking, no doubt, arose from the fact that they applied themselves much to the study of geometry and astronomy, two sciences which require a great concentration of the mind. It is known that the effect of wine is bad in hot countries, and this is why none of it was ever presented to the Pharaohs.

Pythagoras, also, adopted without restriction, the injunction of the Egyptian priests concerning wine. Moses, however, did not pay the slightest regard to it, and allowed his people to drink this liquor, for which they showed a peculiar propensity. Noah planted and cultivated the Vine in the old land of Gessen, now called Bir-aban-ballah, and at the present time one of the most beautiful agricultural districts belonging to the Khedive. With regard to Noah's Vine, here is a legend which has reference to the deluge.

When the ark was cleared of all the animals which had been shut-up in it in order to escape the deluge, the Vine was not to be found, and Noah addressed himself then to the Angel Gabriel, in order to know what was become of it. He was told the Devil had carried it off. On Noah demanding it of him, he obstinately refused to give it up, under the pretence that it belonged to him. "Very well, then," said the Angel Gabriel, "share it between you." "I am very well contented," replied Noah, "to give him the quarter." "That is not enough," said the Angel. "Very well then, the half," answered Noah. "That is not enough yet," continued Gabriel; "he must have two-thirds of it, the remainder is sufficient for you." By this the Angel of God would imply that as the juice of the Vine had the property of inebriating and destroying man's reason, it ought to be partaken of moderately by him.

The Egyptians cultivated their Vines as bushes—that is, they pruned them like shrubs without prop or trelliswork. They grew them in this way in large enclosures near their dwellings.

Among the Romans the Vine was very frequently planted at the foot of Mulberries, Acacias, Poplars, and other trees with a bulky head. The shoots were allowed to grow to a great height, and were scarcely subjected to pruning. In this manner abundant and excellent raisins were gathered, and it is still the system pursued in Italy. We have ourselves, in the outskirts of Bologna, seen immense fields of Vines planted near Mulberries and Maples, and arranged in long lines as in the cultivation of Maize and Hemp. We have grown the Vine thus in several parts of the Khedive's dominions, and have gathered abundant bunches of Grapes without pruning or culture.

The Egyptians must have brought the Vine from Asia, for they had carried the transferring of plants from one country to another to a great extent. The hieroglyphics still show us the Egyptians disembarking from the Red Sea with foreign plants, which they derived in their victorious incursions upon the Asiatic nations. It must have been from Asia, its original home, and where it is most often found in a wild state, that the Vine was introduced into Egypt. From Egypt it must have been carried to Greece and Italy, and thence into the centre and north of Europe. All clue as to the date of the introduction of the Vine into Europe is wanting. We only know that in the fifth century of the Christian era, the barbarians of the north were attracted into Gaul by the juice of the Grape, and then two hundred years had passed since the cultivation of it had been practised upon the hills of the Rhone.—M. G. DELCHEVALRIE.—(*Belgique Horticole*.)

USES OF A SMALL GREENHOUSE.

IN answer to "BRIGHTON," Mr. Fish writes as follows:—"You may do great things in your small greenhouse, but there is the risk that if you attempt too much you will fail in more than you can at present reasonably expect. The first place I occupied was visited by the celebrated nurseryman Joseph Knight, and as I had some little places crammed, resolving to get fruit and flowers out of them, he tapped me on the shoulder and said, 'Mr. F—, I am bad enough, but you are

ten times worse. You will never get all these things to thrive in company.' Well, for a time I did, but ere long the man of more experience proved correct, and I had to cut out first this, and then that, and ultimately devote the little house to one or two, instead of half a dozen kinds of plants.

"Your house is $15\frac{1}{2}$ by 11 feet, and has a hipped roof; the long roof facing the east 8 feet, the short roof facing the west 4 feet. You propose devoting the last to Vines, and the former to Cucumbers, from May to September, with the help of a dung bed. I may state that the height of the house in front is $5\frac{1}{2}$ feet, height to angle of roof 10 feet. Now, as you wish to combine these with flowers in winter—Primulas, Cinerarias, Camellias, &c.—I say that you would command greater success if you had some means of heating the houses. With your large panes of glass you will grow Cucumbers well, and also hardy Grapes; but what will you do with your plants in winter if there be a sudden frost.

"Secondly, Though you gain in warmth with a hipped-roofed house, you would be more successful, if you had heat, if your house were span-roofed and faced east and west, as on the whole, with unobstructed sunlight, that is the most favourable position for a house, for then the midday sun strikes the house so as not to greatly interfere with the comfort of the inmates.

"Thirdly, I have grown Vines and Cucumbers successfully under worse conditions, but I do not approve of mingling them too much in one house. I seldom smoke Cucumbers, but beginners will sometimes have to do so, and the smoke does not at all times suit the Vines or Grapes. The two can be well grown with experience and care.

"Fourthly, As I can hardly see the state of your Vines referred to, I would advise you to purchase strong fruiting canes from such nurserymen as advertise in these columns, and after cracking the pot to pieces plunge it in good soil, and take what you can get from it for a couple of years. As you are anxious for fruit I would do so, if I paid from 7s. 6d. to 10s. for strong plants unpruned. At the same time I would plant carefully young plants at from 3s. 6d. to 5s., and cut them back so as to be permanent Vines. The sorts I would recommend would be one Royal Muscadine (white) and one Black Hamburgh.

"Fifthly, The only place where I see in the circumstances you could grow a Peach and Nectarine would be upon the back wall that abuts against the hipped roof; but you could only succeed there by having an open space in the roof to give light to the trees. With the east front covered with Cucumbers, and the west hipped roof with Vines, where is the light to come from? You might have some half a dozen or more Peaches and Nectarines in a fruiting condition in pots, and could fruit them before the glass is covered with foliage.

"Although you set the fruit in spring, if the roof be covered with the foliage of Vines and Cucumbers, there will be little colour or flavour in the fruit.

"In one word, I feel for you. I tried more than you speak of, and failed as the permanent plants grew; and one word more, if you wish your little house to yield you pleasure in winter, resort to some simple mode of heating.—R. F."

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

ODONTOGLOSSUM FARDINUM. *Nat. ord., Orchidaceæ. Linn. arr., Gynandria Monogynia.*—Discovered by Dr. Jameson in the Andes of Ecuador. Panicle 2 to 3 feet long, spreading, many-flowered. Flowers 2 inches in diameter, pale golden yellow, with a few orange-red ocellated spots on the petals and lip. Crest of two lateral wings with an erect spine.—(*Bot. Mag., 5993.*)

CIENKOWSKIA KIRKII. *Nat. ord., Scitamineæ.*—Roots, tuberous fibres. Stem formed of the sheathing petioles of the leaves. Leaves large, with narrow translucent margins. Flowers 2 inches broad across the lip, with a double perianth. Inner perianth in two series; three outer connate, sub-equal, connate into a short tube at the base, white; three inner connate into a broad, round, expanded, three-lobed lip, split to the base next the axis, pale rose-purple, with a bifid golden spot opposite the anther.—(*Bot. Mag., 5994.*)

LITANTHUS PUSILLUS. *Nat. ord., Liliaceæ. Linn. arr., Hexandria Monogynia.*—A very small Liliaceous plant, with leaves like green threads, and white nodding flowers. It is a native of Southern Africa. Leaves 2 to 4 inches long, in pairs, erect. Scape erect, rigid, about half the length of the leaves. Flow-

ers solitary or in pairs, from one-sixth to one-quarter of an inch long.—(*Bot. Mag., 5995.*)

PELAGONIUM OBLONGATUM. *Nat. ord., Geraniaceæ. Linn. arr., Monadelphia Pentandria.*—A native of South Africa. Remarkable for having a thick fleshy rootstock, which is about the size of a Carrot, being of a rich brown colour, and possessing a kind of flaking bark. Flowers umbelled, numerous, pale yellow.—(*Bot. Mag., 5996.*)

CHRYSANTHEMUM (PYRETHRUM) MAWII. *Nat. ord., Compositæ. Linn. arr., Syngenesia Superflua.*—This plant is in certain respects allied to the *Myconia Chrysanthemum* of the Mediterranean region. It is a native of the Greater Atlas, on the lower range of which it is generally found. Heads about 1 to $1\frac{1}{2}$ inch in diameter, solitary, long-peduncled; peduncle gradually swelling upwards. Ray flowers about twenty; ligule obtusely three-toothed, white, rose-coloured at the back. Disk flowers brown, tubular.—(*Bot. Mag., 5997.*)

WALTHAM CROSS GRAPE.—"This fine Grape is one of many seedlings exhibited before the Fruit Committee of the Royal Horticultural Society in the autumn of last year, and was awarded a first-class certificate. The largest berries on the bunch then shown were from $1\frac{1}{4}$ to $1\frac{1}{2}$ inch long. It is a late variety, hanging on the Vine till spring. The constitution is hardy, the Vine bears abundantly, and the berries set freely. Although the berry resembles the Muscat of Alexandria in size and form, the flavour and other characters are akin to the Black Hamburgh. It will be sent out by Mr. William Paul in the spring of 1873. It may be expected to prove a fine late-keeping white Grape. The bunches are very large, tapering, and well-shouldered. The berries also are very large, oblong-oval in shape, of a pale and very pure and clear amber colour; the skin membranous, enclosing a firm solid flesh, with a sweet and pleasant flavour. It will be a desirable companion for Lady Downe's Seedling."—(*Florist and Pomologist*, 3 s., vol. v., p. 217.)

WEED EXTIRPATOR.

MESSRS. DICK RADCLIFFE & Co., of 129, High Holborn, London, have sent us a weed extirpator, of which the accompanying is an engraving, and which, we believe, will be found useful for the purpose of extirpating what are known to gardeners as "root weeds." It is, as they state, very light, and can be used without seriously disturbing the surface. They recommend it as being specially adapted for use on lawns and croquet grounds, and give the following directions for use:—Open the points slightly, and insert them into the ground under the plant to be extirpated, raising it by pressing on the fulcrum of the implement. Remove the tool from the ground, and pick out the weed with the points, when it will be found to come away with the roots unbroken, and little or no soil adhering to them.



NOTES AND GLEANINGS.

THE CROP OF APRICOTS AT COLESHILL GARDENS, BERKSHIRE, an unusually heavy one, was entirely spoiled by mildew last year. The fruit which ripened was small and flavourless, and the trees seem to have received a great shock, for this year they have produced but little blossom, borne no fruit, and made but small growth, notwithstanding the continual mild open weather. Such instances strengthen the opinion that Apricots, Peaches, and Nectarines will soon require to be cultivated under glass shelters only.

— A FRENCH farmer has discovered that the use of tan is an efficient preventive against POTATO DISEASE. For three years he has introduced a small quantity of the residue of the bark used for tanning into each hole on planting his Potato crop, and each time he has been completely successful in preserving his fields free from the annoying disease.

— THE PROSPECTS OF splendid crops in the Agra district have been destroyed by LOCUSTS, which are, however, being turned to account by other bipeds than birds, as they are said to "make capital curry, very similar in flavour to prawns."

— WE learn from a foreign paper that nuts of the "TAGUA TREE" are being exported in great quantities from New

Granada to other parts of the world, particularly to the United States. They are very hard, and permit of being shaped into any form, and so are often employed in place of ivory. The tree belongs to the Palm tribe, and has been named by Spanish botanists *Phytelephas macrocarpa*. The following is a description of it given by Spanish writers:—"The Indians cover their cottages with the leaves of this most beautiful Palm. The fruit at first contains a clear insipid fluid, by which travellers allay their thirst; afterwards this same liquor becomes milky and sweet, and it changes its taste by degrees as it acquires solidity, till at last it is almost as hard as ivory. The liquor contained in the young fruits becomes acid if they are cut from the tree and kept some time. From the kernels the Indians fashion the knobs of walking-sticks, the reels of spindles, and little toys, which are whiter than ivory, and as hard, if they are not put under water—and if they are, they become white and hard again when dried. Bears devour the young fruit with avidity."

—THE following is an answer, well amplified, to a very old charade:—A lady requested to know Why a gardener is the most extraordinary man in the world? and the solution was, Because no man has more business on earth, and always chooses good grounds for what he does. He commands his own Thyme; he is master of the Mint; he raises his own Celery every year; and it is a bad year indeed that does not produce him a Plum. He meets with more boughs than a minister of state; he makes more beds than the French kings, and has in them more Painted Ladies, and more genuine Roses and Lilies than are to be found at a country wake. He makes raking his business more than his diversion, as many fine gentlemen do, but makes it his advantage both to his health and fortune, which is the case with few others. Then he indulges his own pleasures; and then he is plain in his dress with his Bachelor's Buttons, yet he encourages Cockscorns with Prince's Feathers, and greatly admires the Pride of London, and with pleasure beholds his Love-lies-bleeding under a Weeping Willow. His wife, notwithstanding, has as much Lads' love and Heart's-ease as she can desire, and never wishes for weeds. Distempers fatal to others never hurt him, and he thrives most on Consumption; he is Nature's assistant, and is as famous for his Balm of Gilead, Female Balsam, and genuine drops as an apothecary, and his Thrift abounds by Honesty. He is a great antiquarian, having in his possession Adam's Needle, the Tree of Life, Jacob's Ladder, Solomon's Seal, the Holy Throne, Venus's Looking-glass, the Arms of France, and the Crown Imperial. He is well acquainted with the Globes, and has crossed the line oftener than any mariner in Great Britain; he is the King of Spades, and is happy with his beautiful Queen Margaret; he can boast of more Laurels than Alexander the Great, and Bleeding Hearts than your ladyship; but his greatest pride, and the world's greatest cause of envy is—that he can have Yew at any time.

ENTOMOLOGICAL SOCIETY'S MEETINGS.

THE second meeting of this Society was held on November 18th at Burlington House, H. W. Bates, Esq., being in the chair. Mr. W. C. Hewitson sent for exhibition a fine specimen of the Camberwell Beauty Butterfly, *Vanessa Antiopa*, taken by himself in his garden in Oatlands Park, near Weybridge, on the 1st of November. It was doubtless on the point of hibernating. Mr. Vaughan exhibited *Crambus verellus*, a new British Moth, taken by Mr. C. A. Briggs at Folkestone in the month of July last; also some varieties of the Red Admiral and Painted Lady Butterflies. Mr. Meek exhibited another new British species of Moth, *Nephopteryx argyrella*, belonging to the family Phycidae, taken near Gravesend; also several interesting varieties of British Lepidoptera. Mr. Wallace forwarded the exuvie of some insect, apparently belonging to the family Tineidae, which had committed much damage in the collections of dried Mosses and Lichens made by Dr. Spruce in Brazil. Mr. Meldola exhibited a drawing of the dark variety of the caterpillar of the Death's-head Moth.

The following memoirs were read:—Notes on the entomological papers published in the "Verhandlungen der Schweizerischen Naturforschender Gesellschaft," from 1823 to 1864, by Mr. Albert Müller; Reply to Mr. Dunning's comments on Mr. Lewis's strictures upon Dr. Hagen's memoir on the British Psocidae, by Mr. Lewis.

THE December meeting of this Society was held on the 2nd inst., the President, Professor Westwood, in the chair. Dr. H. Saussure, of Geneva, was elected one of the eight foreign honorary members of the Society, in the place of the late Professor Pictet. The President exhibited some drawings of details of

several hitherto unfigured species of Strepsiptera, in illustration of the recently published memoir by Mr. S. S. Saunders on that remarkable tribe of insects; also a coloured drawing of a singularly-marked variety of *Cynthia Cardui*. Mr. F. Bond exhibited some interesting British Lepidoptera, including a specimen of *Lycæna Egon*, one pair of the wings of which was brown and the other pair blue; a black variety of *Acronycta megacephala*; varieties of *Miselia Oxycantha* and *Notodonta dodonæa*; and a large new British species of *Ichneumon*, reared by Mr. Mitford from *Lasiocampa Trifolii*.

Major Munn, through Mr. F. Smith, inquired whether, in the experience of any of the members, the queen bee ever used her sting in stinging observers. Mr. Smith stated that on one occasion he had taken the queen from the comb without her attempting to sting him; and the President stated that he had never in his hive-bee experience been stung by the queen. Mr. Smith added that the females of certain Sand Wasps of the genera *Cerceris* and *Philanthus* could not be made to sting the hand, although they stung the insects which they buried by way of store for their progeny.

Mr. Champion exhibited two new British Beetles of small size, *Thyamis distinguenda* and *Lithocharis picea*. Mr. Albert Müller communicated notes on the habits of a species of *Nematus*, belonging to the family of the Sawflies, the caterpillars of which, at the end of October, he had found devouring the leaves of a Sallow bush on Shirley Heath, the midribs of the leaves only being left, the larvæ residing together in small families. He had observed that these larvæ are attacked by the young of a species of field Bug (*Pentatoma bidens*, *Linnaeus*), which sucks out all the juices of their bodies, leaving only the outer skin. He had observed one of the latter destroyed as many as thirty-six of the Sawfly larvæ in four days. The mode of attack of these voracious insects was carefully described.

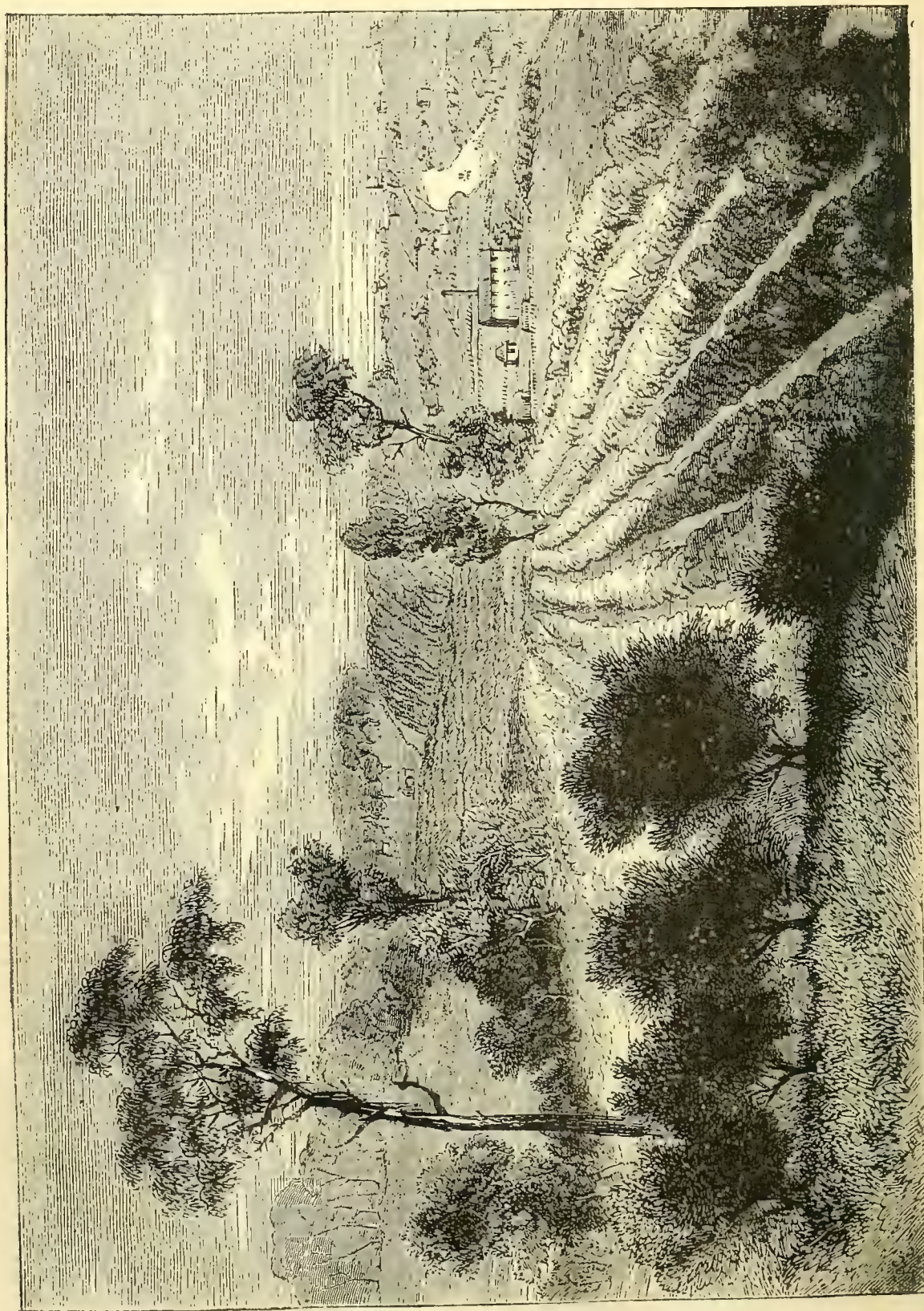
Mr. Dunning read some notes on the genus *Acentropus*, completing his memoir on that curious Moth, the species of which had now been observed in Scotland, Belgium, and Holland. No specimens had been found in Scotland since the days of Dr. Leach until recently rediscovered by Mr. Syme. Mr. Boyd had found the pupa on the destructive American water weed, *Anacharis*, which had destroyed the Potamogeton, the true food plant of the caterpillar of the *Acentropus*.

The following memoirs were read:—1, Descriptions of eleven new species and genera of exotic Beetles of the family Tenebrionidae, by Mr. F. Bates. 2, The first portion of a descriptive catalogue of the Phytophagous Coleoptera of Japan collected by Mr. George Lewis, by Mr. J. Baly. 3, Descriptions of fourteen new species of Butterflies from the extra-tropical part of South Africa, by Mr. Rowland Trimen.

MR. PYE'S ORANGE ORCHARD AT PARRAMATTA.

How many out of ten thousand Europeans have plucked an Orange from its tree, or an oyster from its bed? Perhaps one or two of us—certainly not more. That golden fruit is familiar to such an extent to every Britisher that we almost forget that we never see it before it has been curiously boxed and banded and sent over the seas. The tree, with those silver blossoms, so dear to the dreams of the maiden, in hopes one day to wear them, and with that golden fruit, so dear to the taste of all of us, young or old, grows only in a sunny southern clime. The Orange is a lump of sunshine. It tells outside and within equally of the sun that coloured it, and of the golden sunbeams whose colour, sweetness, and taste live in all parts of it—palpable to every eye that can feed the mind, and tongue that can taste beyond the mouth. All such thoughts and many more were with us when it was proposed that we should go some fifteen or twenty miles out from Sydney to see an Orange plantation—Orange grove, as it was termed. As the trip included a voyage up the pretty Parramatta River and promised to fill-up time in a day's good outing, we cheerfully agreed to be escorted to an Australian orangery, and for the second time in our life to see a sight of which we had for twenty years retained a pleasant remembrance. The remembrance went far over the waters to the island of Madeira, in which we saw our first Orange trees. We never tasted wine nor Oranges until we tasted both at Madeira. It is said that tea that has been brought over the sea has lost more than half its flavour. That which is sold at the great fair of Nishini Novgorod in Russia, brought thither overland from China, we are told, is a delectable drink to what most of us get from the teapot. Whether the tea question in that view can be disputed we will leave now, but as to the Madeira wine and the Oranges that we got in that island we decline to admit of argument. That wine was nectar, and those Oranges, picked from the trees, ambrosia. All the wines that we have tasted since have been as ditch water to that old Madeira that had never left its own island home.

We are going up the Parramatta River all the time we are



ORANGE ORCHARD AT PARRAMATTA.

thus talking about Madeira, and are getting sights of its pretty shores on both its sides. The end of two hours or thereabouts lands us at Parramatta, or as near to it as the tide will serve. The rest is done upon a stage coach—two or three miles—into the red brick township. Parramatta has one attraction—its Domain, a sort of botanical garden that almost rivals that of Sydney, and surpasses anything of the sort to be seen elsewhere in the southern hemisphere. An old English-looking town is Parramatta, with old English sort of inns, at one of which we get dinner, and then progress on our journey. Three miles or so onwards we approach Pye's Orange grove, an Orange plantation twenty-five years or more in age, covering acres upon acres of sterile soil on both sides of the bed of a creek. The Orange, like to the Vine and the Olive, gathers its nourishment best from where we can least see sustenance. How such rich fruits can come of such miserable soils, if we may call rocks and pebbles and shingles by the name of soil, is beyond a limited comprehension, and is a perfect negative to the theories about cause and effect, and of like producing like. If such were good reasoning, the Oranges we saw should have been dry as the Apples of Sodom, and have eaten like to a handful of gravel and triturated rock, instead of tasting like to lumps of spiritualised jelly soaked in heavenly champagne, and perfumed by the goddess Flora herself.

The number of these Orange bushes was quite bewildering. Hardy shrubs about 15 feet high, with dark green leaves and spreading branches from the ground upwards, quite hiding the stem of the bush. Each one was loaded with its golden globes, well set-off by the dense background of green leaf. It seemed a sort of wrong-doing to pull the fruit, but the sense of sacrilege and desecration got blunted after the crime had been perpetrated half a dozen times. We never thought our capacity for eating Oranges was half so great. Perhaps it was that we knew not what we can do until we try. Perhaps it was that the walk and the fresh air had sharpened our appetite, but most likely it was that the Oranges had a freshness and flavour to which since the days of Madeira our taste had been a stranger. We think that was what was the matter.

As oysters lose their flavour hour by hour, from the time they cease to draw the nourishment of their native feeding grounds, so do Oranges from the time that they are taken from the tree. We noticed once a racehorse christened "Old Orange Girl." It was, and still is a question with us, whether the term "old" applied to the girl or to the Oranges, and whether it was intended to imply that the female or the fruit was at all bettered by the process of time. An "old girl" may still be a very good one, but we can answer definitely in the negative about Oranges. To sit as we sat upon the rocks on the shelving sides of the creek, and to suck Oranges under the shade of the trees that produced them, was not a bad way of getting through an afternoon in New South Wales. We became quite posted-up about Oranges that day, and found that like to horses, no part of them but was useful for some purpose. The pulp, the peel, and the pips, all did good service, and that for half a dozen things. We had thought of Orange peel in connection with its sugared state only for Christmas-pudding purposes. If we had another thought thereon it was only as to the slippings-down it had brought us to upon the pavement. We understand that slipping-down now. It is but a silent protest on the part of the peel against its being thrown away and wasted. It calls out to us, in that way, of its value, and bids us not to tread upon that which we should carefully pick up and preserve. Of Orange peel only are made two chemicals, two preserves, Orange bitters, Orange marmalade, and another thing of commercial value—seven valuable things of that which we throw away, and which throws us down for so doing! What fortunes lay at our feet, and what simpletons we are!—J. HINGSTON (in *New Zealand Illustrated Press*).

PERMANENCY OF CONCRETE WALLS.

It is very encouraging to those who have built, and those who contemplate building, concrete walls, to know that such a high authority upon that sort of work as Mr. Pulham, of Broxbourne, should express himself so favourably of their durability (see page 426). There is a vast amount of truth in what is stated with regard to the need of good materials and skillful workmanship, and the copings should be more particularly well laid, so that no cracking may afterwards take place; and if made of brick, as were those at Hatfield, the joints should be of the best material and well filled up, for if the wet should find its way in it will most likely do damage,

and, perhaps, at no distant period a portion of the wall will give way. Considering the great extent of concrete wall built at Hatfield, and the peculiar situation of the ground, it is gratifying that there were so few defects, and these principally arose through the settling of the concrete; the cement facings also in some few places scaled off through imperfect adhesion, otherwise all was well. That portion which was finished before the severe frost in the winter of 1870, and, in fact, all the others, have borne the test of the weather remarkably well, and I should say is not likely now to give way. In laying-on the cement facings, which is generally done in lengths of from 20 to 40 feet, each length should be joined to the other in the most careful manner, otherwise every length can be distinctly seen by the cement cracking from the top of the wall to the bottom at the imperfectly-made joints. Again, in mixing the cement, which generally has a portion of sand along with it, the greatest care should be observed that each mixture should be of exactly the same proportions as the other, otherwise some part of the wall will be lighter than the others, and thereby produce an effect not at all agreeable to the eye, nor will the work be so capable of withstanding the weather at all places alike.—THOMAS RECORD.

WORK FOR THE WEEK.

KITCHEN GARDEN.

DRAINING, trenching, and ridging should now receive attention. A winter's fallow is almost equal to a coat of manure, especially in hard-tilled soil. The keeping roots should be examined, especially where soiled-over. Potatoes are rotting in several parts of the kingdom. I should probably be correct in saying that one-sixth of them have decayed since their removal from the ground. They cannot under present circumstances endure fermentation; this being their greatest bane, seems to point to it as probably the most active agent in originally bringing on the disease. Keep a sharp eye to the protection of tender crops, and cover some *Parsley* in beds in order to exclude snow. Old half-worn-out lights will do.

FRUIT GARDEN.

I looked over a garden not many weeks ago in which the outlay during the last ten years in what are called improvements had been immense, and yet, strange to say, it was still undrained, and almost every crop bore evidence to the fact. The soil is dark and adhesive, and slopes to the north—a most unfavourable site, and the Vine borders were actually below the ordinary ground level. As might be expected, the Grapes were very bad, and the fruit trees in general very slender and shabby in appearance. There are still many badly drained gardens in various parts of the kingdom, and at this period attention should be paid to remedying the neglect. If deep drainage is considered necessary to the agriculturist, it surely is at least equally important to the gardener; and believing the theory of deep drainage to be perfectly correct as to its ameliorating power in gradually deepening the soil, I would make garden drains at least a yard in depth. It ought to be remembered that the old mode of covering the drains with brushwood, straw, turf, or, in fact, any decomposable matter, is now repudiated by first-rate practitioners, as tending ultimately to choke-up the interstices of the drains with silt. Two-inch pipes are in most cases very suitable. These might be covered with a few inches of cinders or pounded stones from which the finer particles had been riddled; on these place a layer of turf from the common or roadside, and finally the soil. The benefits of good drainage in damp or retentive garden soils will soon be manifest in the improved condition of the fruit trees, to say nothing of the vegetables, and last, not least, in driving away a host of snails and slugs, which will be found to diminish as soon as the soil is in a mellow condition.

FLOWER GARDEN.

Now that the leaves are off the trees let lawns and shrubberies have a thorough cleaning. Examine pillar and trellis Roses, and if the weather is favourable see if it is necessary to renew the soil or the kinds. For choice sorts roomy holes should be made capable of containing three or four barrowloads of well-prepared soil. Turfy loam of good quality is the chief material; to this add a portion of rich rotten manure, and, if at hand, a little sandy peat or leaf mould. Proceed with whatever alterations are necessary, delay nothing until spring which can be as well done now. It is a point of great importance to the florist to be not only acquainted with the nature of soils, but likewise with their action on the various flowers he cultivates. I am certain, from long experience, that Tulips, in particular, vary in purity of cup and intensity of colour according to the compost in which they are grown. I have grown a large and valuable collection of these fine flowers in a compost, the major part of which is decayed turf taken from pasture fields whose substratum is red sandstone, and which appeared more or less impregnated with iron. In this soil the flowers were apt to be

tinged at the base. I have next season planted those bulbs, which I considered out of character, in some decayed turf (alluvial soil), from the banks of a river; in this they produced flowers of the most perfect purity. From this it would appear that the presence of iron in soils has an injurious effect on the blooms, whilst in the same soil the plants flourish amazingly, increasing in an extraordinary degree. For Tulips the soil ought to be prepared the previous season. A most successful grower procures turf from a pasture field of a loamy character. After placing a layer of this 6 or 8 feet square, grass side downwards, he covers it with 6 inches thick of cow manure and rotten leaves, and again with a layer of turf, over which are placed turf ashes, covering-up again with turf. This lies till February, when the whole is chopped over and two pecks of salt sprinkled on it as it is turned. In frosty weather it is turned once or twice, and in May it is again chopped over and two pecks of lime added. This may appear much trouble, but it will leave no insects in the bed if it is perfectly sweetened, and the flowers have been always first-rate.

GREENHOUSE AND CONSERVATORY.

The winter flowers will now be making a splendid display in the conservatory, at least where they have received special attention through the summer to this end. *Euphorbia jacquiniæ-flora* is one of the finest of these beauties where properly cultivated. Unless, however, a most healthy root-action is maintained, the leaves are apt to become yellow whilst the plant is in bloom, and this will at once spoil the effect. The plants require a very moderate allowance of water at this season. *Poinsettia pulcherrima* is a very bold and dashing conservatory plant, and indispensable at this time of the year. Well-grown plants of the *Gesnera bulbosa* or *lateritia* are equally useful. This plant should be slightly pot-pounded in order to blossom very early. *Gesnera zebrina* under high cultivation is a most beautiful winter flower, and equally desirable on account of the elegant markings of the leaf, which become very rich indeed in the stove. The old *Plumbago rosea* and *capensis* are still amongst our best plants at this period; the latter flowers freely against a south wall during the summer. Some of the genus *Cytisus* are very showy and fragrant, and, as yellow flowers are somewhat scarce, they become very useful. All these things should have clear liquid manure very weak at this period. I use guano and soot water, which, clarified and become stale, is not in the slightest degree offensive.

STOVE.

Many plants will now be sinking into repose here, and from such water must be withheld. Of these may be named the *Erythrinæ*, the *Clerodendrons*, the *Achimenes*, the *Gloxinias*, &c., with various bulbs. These should have a shelf or division of the house to themselves forthwith, and it should be borne in mind that the *Gloxinia* family and the *Clerodendrons* are very impatient of low temperature, even when at rest. I should not deem them safe below 50°.

FORCING PIT.

This is a good time to introduce the following subjects into the forcing pit provided they have received the necessary treatment during the summer—*Rhododendrons*, *Azaleas*, *Persian Lilacs*, *Sweet Briars*, *Moss* and other *Roses*, *Ledums*, *Kalmias*, *Daphnes*, *Anne Boleyn Pinks*, *Dutch bulbs*, &c. Unless, however, they are in proper trim, it will be labour in vain, and no mode of forcing or form of pit can compensate for this.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

We have never known more sudden changes of weather. On the evening of the 4th we prognosticated frost, and made preparations to meet it by sheltering Cauliflowers and protecting cold frames. On the morning of the 5th the thermometer fell from 4° to 6° below freezing, and just before sunrise as low as 10° below freezing point. The opportunity was taken to wheel litter over the hard ground, to be ready for protecting Cauliflower under hand-lights, and Celery in beds. We made ready for another night's frost, but in the afternoon we thought we should have a snow storm, and felt pleased rather than otherwise, as snow, unless in such excess as to break and crush by its weight, is one of our best protectors. Contrary to our expectations, darkness had scarcely set in when, instead of the snow, we had a continuous drenching rain, and since then the weather has been mild rather than cold, but so wet as to interfere greatly with out-door operations. Except trenching, ridging, and rough digging, all nice operations on the ground had better be delayed until a more favourable opportunity. Hardly anything will thrive when sown or planted in mud. It is true economy to wait for the ground being in better condition.

Celery.—As soon as the sun thawed the tops of the Celery, we drew a little long litter between the plants in the beds, chiefly three plants across. This of itself would afford much protection. Some more litter was left to be thrown lightly over the tops of the plants if the frost continued, but it remains there still. Hitherto this season we have not lost a single head of

Celery—that is, not a single head has been taken up that was not fit to appear at table. When grown, as by many farmers and amateurs, in single rows, much injury, causing damping and rotting at the core, is produced from over-earthing-up. When we did not closely look after the earthing-up we have suffered from this in the spring of the year. A little long litter at the top would be better than so much more earth, and would afford protection at the same time. We find, however, that too much of this litter is dangerous in wet weather. It retains the wet too much, and is apt to damp the plants. Therefore, the lining we have referred to should not be too thick; and, again, in damp weather it should be shaken and turned—a matter involving no great amount of labour. Placing long litter along the sides of plants, requires greater watchfulness in our case than when Celery is grown in single rows, as we are compelled, in order to save space, to grow it in beds. In either case a little long litter will be better than an extra earthing-up. A year ago we saw an amateur take up a row 30 feet in length, and every plant was rotten at the core. If there had been 9 inches less earthing-up, and 1 or 2 inches of litter instead, there would have been no reason why every head should not have appeared at the dining-table.

Celery is as hardy as any of our wild plants, but we have made it tender by our treatment. In severe frosts, therefore, it is advisable to shake lightly over the tops some light long litter, which protects the plants sufficiently, taking care that the litter shall be carefully removed the day after the thaw. Where a little long litter, tree leaves, moss, &c., can be obtained, it will be found true economy not to earth-up late Celery too much, just as it will be found true economy not to earth-up early Celery on the bit-by-bit system recommended in most garden books.

Salads.—To save as much as possible Lettuces, &c., under glass, we covered in the dry day before the frost a fine bed of Endive, by placing some useless mats over it to keep it clean, and then covered with tree leaves and a little litter to keep them from being blown away. This will be in fine order about Christmas time. Endive for late and present use has been blanched by slates and boards merely laid over the plants. The appearance in the salad bowl of Endive and Chicory well blanched is very enticing, but to our own taste we never think either equal to a Lettuce; still we must think of appearances as well as quality in these days. There are numerous ways of obtaining nice Endive. Perhaps the best and easiest-blanced Endive we ever had was obtained by taking some thousands of fine plants into a large underground chamber at the end of a hothouse. We have seen milk-white Endive taken out of that chamber daily from November to March. Such a chamber heated from the stovehole of the large hothouse would, in addition to Endive, have produced a superabundance of Sea-kale and Rhubarb, where the pale colour was not objectionable, and even of Asparagus, if the heads could be placed in bright light a few days before being sent to table. As assistant we blanched Chicory in first-rate style in the same place. In a simple way, on a small scale, we never had Chicory better than by filling a 12-inch pot with good roots, placing another 12-inch pot over it, claying the junction to keep light out, closing the hole in the upper pot, placing the whole where there was a medium temperature of 60°, and cutting when the heads were 5 or 6 inches long. Some amateurs have thus had fine Chicory, and even Dandelions quite as good. On a large scale nothing is better than a small barrel pierced with holes all round, the heads of the roots protruding, and the roots bedded in soil in layers in the interior of the barrel, and the barrel itself set in a dark place in a temperature of from 50° to 60°—just such a place as would grow Mushrooms all the year through.

Mushrooms.—Several correspondents have complained that they are found fault with because they cannot have Mushrooms in plenty to a given day. All we can say is that we should be as blameable as they. With plenty of means there ought to be a constant supply; with limited means the supply will be more uncertain. A late employer considered no cookery could be worth much without Mushrooms and the Onion tribe, and, of course, we tried to meet the want. With small and few beds, Mushrooms cannot be depended on for a day. For instance, a fortnight ago we could have gathered a quantity every day. Expecting company, we rather hastened them on. The company came some twelve days later than we expected, and when the visitors arrived the glut was over, and the succession, though white, were scarcely the size of pin heads. With the exception of what were wanted for cutting-up, instead of being able to send a good large dish every alternate day, we have been obliged to content ourselves with two dishes per week. If we could not have sent a dish at all after what was gathered, there would have been annoyance, but there could hardly have been blame. We wish it to be clearly understood, that the best Mushroom-growers cannot depend on what will be the result at a certain hour or day some weeks hence. Where there are plenty of conveniences, the only security for a constant supply is plenty of beds and means. We can generally calculate within a fortnight or three weeks. We cannot calculate to a day or a week as to what a

bed will do. We think it is only right to state this. For a fortnight just now we should have found no quantity of Mushrooms out of place, and we are scarcer than we have been for some time. Very probably, and most likely from appearances, a fortnight hence we shall be as well supplied as we were three weeks ago, when there was a glut rather than otherwise. To gardeners who have little experience, and to employers who do not enter into details, we say, as the result of much and successful experience, that with limited space you must not calculate on dishes of Mushrooms to a day.

Another thing we have long found out—that in a Mushroom house, where there are shallow raised beds, and these beds can be pushed on by fire heat or even dung heat beneath, shelf beds are more under command than beds built on the ground level. From shelf beds we generally calculate to have Mushrooms six weeks after spawning and earthing-up. In particular cases, by more shallow earthing-up and a little more heat, we have had fine gatherings in a month. In general, such early gathering is not attended with the same continuance of bearing as when the bed has had more time to arrive at maturity. In bottom beds on the ground in a Mushroom house in winter, and in sheds and shady places in summer, we have often gathered in six weeks after spawning and earthing-up, but it was frequently much longer. We have waited as long as eight, ten, and in some cases twelve weeks, and then had rich gatherings.

We state the foregoing simple facts merely to show that with limited space a gardener is not to be blamed if he cannot have plenty of Mushrooms to a day or several days, and more especially if he has received only a few days' notice. If employers want the most from their garden on particular occasions, the gardener should not have merely hours, but weeks of notice, and he should have that notice direct.

FRUIT GARDEN.

The remarks of the last week will apply: the ground is too wet for planting, and even pruning should not be done unless the pruner has short boards to stand upon. We would rather delay a little than have the ground trodden when it is so wet.

ORNAMENTAL DEPARTMENT.

The same remark applies here. In fine days we have pruned Laurels and shrubs, because the turf was too solid to be much acted on by the feet of the men. The lawn, having been cleaned and light-rolled with the wooden roller, presents a rich green all its own after these heavy rains, and more especially as the worms seem to get enough to satisfy them beneath without coming to the surface and leaving their rich earth heaps. If they do come, the wooden roller soon puts the little heaps out of sight, and the roller only wants scraping to keep it clean.

As regards planting Tulips, Anemones, and Ranunculuses, the work, though wanting to be done, had better be delayed until the ground become drier. The hardiest Roses may be pruned, but that, too, had better be delayed a little if there should be any necessity for standing on the wet soil, and thus making it so solid that it would be a long time before it could be made friable, open, and healthy again.

With the exception of the one frosty night our cold pits have had air night and day. On the day before the frost we exposed Violets and our cuttings of Calceolarias to the full sun, and were glad thus to get the surface a little dry. The Violets we covered between the rows with a coating of the driest and roughest ashes we could get. The flowers will be all the finer of this dry surface, and slugs, &c., will be deterred from approaching them. As yet we have had enough out of doors, and we keep these, planted lately in a cold pit, for an emergency, as a single night of frost, though it may not greatly injure the appearance of Violets out of doors, takes away their chief attraction—their rich perfume. We have made Violets into bouquets because they looked well, though we knew their scent was gone. A few flowers from a protected place did something to redeem the want.

Calceolaria Cuttings in the cold pit are much the same as when inserted; not a cutting seems as yet to have gone. A few weeds were pulled out, and a pointed stick run-up between the rows to loosen the rather firm surface, as it was getting rather damp. The first-planted cuttings are just showing the buddings of roots. They have so callused at the base as to stand unflinchingly several days of rather strong sunshine with the sashes removed. After the exposure, the cleaning, and the surface-stirring, we felt sure that, if necessary, these cuttings might in severe weather have been shut-up for weeks night and day, and would have sustained no injury. The only precaution in such cases is simply this, that the inside temperature should be free from frost, and yet so low as to cause no elongation of growth.

We proceeded with potting, repotting, watering, &c., spilling as little water as possible in this damp weather, as most places are damp enough; and we gave weak manure water to Primulas, Cinerarias, Camellias, Euphorbias, Poinsettias, Eranthemums, and the later Chrysanthemums. To succeed the latter we shall have large plants of double Geraniums, &c., as we find them

most useful, and they do not drop their flowers like single ones. R. F.

TRADE CATALOGUE RECEIVED.

Kirk Allen, Brampton, Huntingdon.—*Catalogue of Roses, Vines, Evergreens, &c.*

TO CORRESPONDENTS.

N.B.—Many questions must remain unanswered until next week.

SELECT CHRYSANTHEMUMS (W. S.).—*Large-flowered*: Prince Alfred, Empress of India, General Slade, Jardin des Plantes, Beverley, John Salter, Prince of Wales, Princess of Wales, Venus, Lady Harding, Baron Benst, Fingal, Le Grand, Mr. Brunles, Little Harry, Princess Beatrice, Rev. J. Dix, Mrs. G. Rundle, Bronze Jardin des Plantes, General Bainbridge, Hereward, Lady Talfourd, Lord Derby, Queen of England. *Pompons*: White, Lilac, and Golden Cedo Nulli, Bob, Golden Aurore, Hélène, White Trevenna, Durudet, Sainte Thais, Salamon, Aurore Boreale, and Mustapha.

GARDENERS' ROYAL BENEVOLENT INSTITUTION (W. G.).—Write to Mr. Cutler, the Secretary, for the rules. His direction is 14, Tavistock Row, Covent Garden, London.

EMIGRATING GARDENER (*A Subscriber*).—We never recommend any plan to an intending emigrant; it would require far more information than we can possess to justify us. If we found all circumstances suitable, we should prefer Victoria in Australia. Write to the Emigration Commissioners; they will send you any information you need.

CAMELLIAS FOR TRELLIS (*Centurion*).—We do not know any nurseryman who trains Camellias for trellises, but many plants in the bush form have the shoots well disposed for the purpose. Good kinds for a trellis are—Bealii (*Leana superba*), crimson; Bonomiana, white, flaked and shaded carmine; Conspecta, scarlet, semi-double; La Pace, white, striped and shaded scarlet; Mathetiana, crimson; Mathotiana alba, white; Monarch, scarlet; Mrs. Cope, white, striped crimson; Reticulata flore-pleno, rose; Rubens, rose; Valtevarado, rose; and Alba plena, white. You will secure young plants at from 3s. 6d. to 5s., or larger plants may be had at prices proportionately increasing with the size. The border should be well drained, and the compost formed of the top inch of a pasture where the soil is a light loam, chopping it up rather small, and adding a third part of sandy fibrous peat, and half a part of old cow dung or hotbed manure, well mixed, and put in 9 inches higher than the intended level.

PEAR FOR SOUTH WALL (*Idem*).—Of the Pears you name—viz., Doyenné du Comice and Duchesse d'Angoulême, we should prefer the former, though the latter would attain a much larger size on a south wall than in the open. Céline Forestier Rose sometimes does not bloom well against a wall, nor do many others if the soil is very poor and unsuitable, and too dry. Plant it in good soil, water freely in dry weather, and syringe frequently, and it will flower well.

DESTROYING SLUGS—CLUBROOT (*R. Gregory*).—For destroying slugs we know of nothing equal to quicklime, which should be dusted over the soil and plants in the evening or morning, repeating after rain, which makes the lime inert. This persisted in will effectually keep slugs under. Clubroot is not so easily dealt with, but a dressing of salt in March, at the rate of twenty bushels per acre, is a good preventive of club, and very destructive to slugs. Gas lime may also be applied at the rate of twenty bushels per acre before planting, and dug-in; and you may also apply 1 lb. nitrate of soda to 30 square yards. We should use the means above named to the seed beds as well as to the ground into which the plants are transplanted. Soot is also known to be a good preventive. Make the ground quite black with it, and point it in with a fork lightly before sowing.

LAPAGERIA ROSEA POTTING (*M. C.*).—Your plant will need to be potted early in February, and we should give it a 9-inch pot, draining it well, and using a compost of sandy fibrous peat two parts, one part very fibrous loam, half a part old cow dung or leaf soil, the whole torn in pieces roughly, adding a sixth of silver sand. Pot moderately firm, with the crown slightly raised in the centre of the pot.

GARDEN GRUB-INFESTED (*P. F. H.*).—The most effectual and permanent remedy is to pare-off the surface and burn it. This may, however, be too costly a proceeding, and only applicable to portions of your garden; we therefore advise your procuring some gas lime, and applying it to all the uncropped ground at the rate of forty bushels per acre. Spread it evenly, dig the ground, and, as it is clayey, throw it up roughly in ridges for the winter. In February we should level the ground, choosing dry frosty weather, and in March dress it with quicklime at the rate of a hundred bushels per acre, and fork this in whilst fresh. At this rate you may apply it to all fruit and flower borders. It will destroy every kind of slug as well as every egg it comes in contact with, and makes the soil obnoxious to almost all kinds of grubs. Early in April dress with salt at the rate of twenty bushels per acre, but it must be kept from the hearts of Cabbages and the leaves or stems of plants; though sprinkled around them, it will not do any harm, but is a great slayer of slugs, and is also a preventive of the club. Soot is likewise good, and may be applied at the same rate as the lime; the last two may be applied at all seasons without injury to the growth of the plants. The lime is, perhaps, the best destroyer of slugs; apply it in the evening or early in the morning after a shower of rain. If the surface be made white it is enough. The lime should be quick but fallen; if it is wet it will be of no use.

CLEMATIS PLANTING (*F. J.*).—The best time to plant is at the end of March or early in April, when they are beginning to grow. The covering of the wall with Ivy is to take off the bare appearance of a wall in winter; the small-leaved kinds are particularly applicable, and especially for a low wall such as yours. We have the wall of a cottage covered with Ivy, and Clematis grows, as it were, on the face of the Ivy; when the Clematis becomes leafless we cut it in, and the Ivy gives us a cheerful winter clothing to the wall, while enhancing the beauty of the Clematis in summer. For your low wall we should have the small-leaved Ivies, as *Hedera taurica*, *H. donerailensis*, *H. variegata argentea*, *H. argentea rubra*, and these will not impoverish the border so much as the larger-leaved sorts. You may annually cut their roots at about 9 inches from the wall; and if the border be mulched with leaf soil and enriched with manure, which are essential to the well-doing of the Clematis, we do not think your herbaceous plants will suffer to any great extent.

ASPARAGUS PLANTING (Meadow Pipit).—There is little, if anything, gained by planting large plants, which, from the loss of roots, do not transplant so well as younger and smaller plants. We prefer plants two years old; we have not found those three years old answer nearly so well as plants one, or at most two years old. The best time to plant is at the end of March or early in April; it is better to plant them when they are beginning to grow, rather than when dormant. As regards kinds, that known as Giant is most in repute. Conover's Colossal is said to be the largest variety known. You may, probably, procure plants of it one year old.

POT VINES IN AN EARLY HOUSE (Subscriber).—When particular advice is required the particular circumstances should be detailed, otherwise we might write an essay, and yet not meet your case. Start the Vines very gradually, beginning at 45°, creeping up in a fortnight to 50°, and then going on as gradually to 55°, and not exceeding 60° by artificial heat until all the buds have swelled and broken. With these precautions we have forced pot Vines very well on a platform or stage, with the ordinary care of moistening the buds several times a-day in bright weather. Secondly, if the pots can receive a mild bottom heat of from 70° to 75°, and in three weeks 80°, it will greatly help the Vines. It matters little whether the pots are plunged in a mild hotbed or are placed in a sort of wooden case over a flue or pipes, provided the heat at first does not exceed 70°, and rises a little gradually; it will be an advantage to get the roots a little in advance of the shoots. When we could not secure any of these advantages we still found it to be in favour of the plants if we could set the pots in large flats or saucers over a hot-water pipe or flue; but in this case the pot did not rest on the bottom of the saucer, but on three pieces of pebbles or brick, an inch or 1½ inch from the bottom, so that water could stand in the bottom of the saucer without the pot standing in it. These little matters may seem trifling, but after considerable experience we have no doubt that success will much depend on such trifles, and all the more when early forcing is the object.

GRAPES IN A GREENHOUSE (A Northamptonshire Subscriber).—We do not think that the Muscat will do much good in a house where the frost is merely excluded. For the six Vines to be added we would recommend one Royal Muscadine, one Buckland Sweetwater, one Black Champion, one Black Prince, one Trentham Black, and one Lady Downe's for keeping. As expense seems to be no object, we would advise purchasing strong fruiting canes, say the half dozen, in large pots. Plunge the pots after cracking them all round to let the roots out. Take what fruit you can of these for a year or two. At the same time plant out younger Vines in the usual way, and treat them for enduring plants, taking little or nothing from them for two years, and by that time you can remove the forward exhausted plants.

CHATELAIN PEAR TREES NOT SUCCEEDING—PRUNING THE SWEET BAY (E. H.).—There is nothing the matter with the young wood of your Pear trees. The spotted appearance is natural to it. A heavy and deep soil ought to be well drained. Have you paid attention to this? Prune the Bay tree in spring before it starts into growth; shorten-back the gross shoots, that is all that will be required. Place your "Lemon" plants in heat in the spring; the young growing shoots will strike freely in a little bottom heat.

PRUNING OLD APPLE TREES (G. S.).—Your Apple trees have been badly managed. When pruning is performed it is quite as necessary to thin-out the shoots as it is to cut them back. Thin-out sufficiently to allow light and air to circulate freely in the centre of the tree. Cut out the greater number of the accumulation of spurs you write about, and cut the leading shoots back to within 1 foot from the base. Cut all young wood close back where it is not required. Parkes's steel spades may be had of Palmer & Hodgkinson, Sutton Works, Birmingham; forks of A. & F. Parkes & Co., Dartmouth Street, Birmingham.

KNIGHT'S MONARCH PEAR NOT RIPENING (Janet).—We planted a Knight's Monarch Pear on a wall with an east aspect, and like yours it bore a good crop last year, which never did ripen, but remained hard until April. This year they are now coming in, and are of excellent flavour. Pears are very capricious as to soil and climate. If you find this variety will not ripen with you, cut down the tree and graft with some other variety.

TREATMENT OF GREENHOUSE VINES IN WINTER (H. F. R.).—The only treatment required is to remove the leaves as they fall, and after there have all fallen the Vines should be pruned between now and the new year, cutting the current year's shoots to two eyes; and when this is done trim-off the loose parts of the bark on the spurs as well as rods, and then dress with 4 ozs. of soft soap to half a gallon of tobacco juice, adding as much sulphur vivum as will bring it to the consistency of thin paint, applying with a painter's brush, rubbing it well into every crevice, and taking care not to rub off the eyes. The Vines should not have a higher temperature in winter from fire heat than 45°, better if it do not often exceed 40° from fire heat.

SHORTENING RASPBERRY CANES (Bird's-eye).—We think the failure of the crop this year was due to the "cold, dry, east wind just as the fruit was forming." Cutting-out the old canes, and reducing those for next year's fruiting to from 5 to 7 to each stool, are quite right, and we should have cut off the small extremities of the canes; but you may do it in spring when the buds are swelling. As a rule, we cut off between 9 inches and a foot of the ends of the canes. If the wood is not ripe, the shortening of the canes is best done in spring. We presume you have given the plantation a good dressing of manure; if not, it should be done at once, not digging-in or using any implement that will injure the roots.

PRUNING WHITE JASMINE (Idem).—The irregular growths and old dead parts, if any, should be removed now, nailing-in all the shoots that are required for extension or covering the wall. Defer shortening the shoots until spring. They should be cut back to within an inch of their base, except those which are nailed-in for extension or covering the wall; such should only have their weak points removed.

DOBIE'S CHAMPION LEEK (N. S. S.).—We do not know where you can obtain seed.

PUNNET.—"Civis" writes to ask that we will condemn the use of deal shavings for forming this basket, as they give a turpentine flavour to fruit put into it, but we can do no more than publish the remonstrance. If any basket-maker will produce a cheap and unobjectionable punnet made of any other material, the fruit-dealers would probably adopt it.

FILBERT CATKINS (Octogenarius).—Like ourselves, we fear you have to wear spectacles, and that on the 31st of October you had lost them, for on page 353 of our number then published your query is answered. Your *Gladious* query we have sent to a good authority, and hope to publish his answer next week.

STRONG MANETTI ROSE STOCKS (J. S.).—If your Manetti stocks have not grown too much, they may be reduced to one shoot each, and budded-in

another year; but if they have grown a good deal it is better to transplant, cutting off all but one shoot, and carefully removing all eyes below the ground. Bud on last year's wood, which can be done by earthing-up the shoot, by ridding-up the soil when planting in rows, and scraping away the earth when budding. See reply to "AN OLD READER," page 452.

LAWN WEEDY (A Constant Reader).—The Daisies may be considerably reduced in number by removing the roots with an old knife. We should advise their being removed in mild weather during the winter, and with them Plantains and all other weeds. In March dress the lawn with any well-rotted manure, or the remains of a rubbish heap mixed with a fourth of quicklime, and in April give the surface a good scratching with an iron rake, and remove the rough parts of the manure or compost. In calm dry weather, but with an early prospect of rain, sow over the lawn evenly, 6 lbs. of *Festuca duriuscula*, 12 lbs. *Cynosurus cristatus*, 2 lbs. *Poa nemoralis sempervirens*, 8 lbs. *Trifolium repens*, and 4 lbs. *Trifolium minus*. Roll well after sowing, and do not mow much until June, or rather not very closely, and after that keep the grass well rolled and mown, but not very closely in dry weather. The growth of Daisies and other perennial weeds has been much encouraged by the wet of the present season. It is not well to mow so late in the season as December, as if frost occur the grass is apt to become brown, which appearance it will have all the winter. The grass seeds named are for renovating a lawn of one acre.

EUCONYMUS EUROPEUS AND KALMIA CULTURE (O. W. D.).—The sprig you enclosed to us is one of *Euconymus europaeus fructu-albo*, the white-fruited *Euconymus*, very pretty, the berries at this season being fine, and we do not wonder at your receiving it in a bouquet. It is a hardy deciduous shrub, succeeding in common soil, but it does best in light well-drained ground. Cape Jasmine is the *Gardenia florida*, which will succeed in a greenhouse with a winter temperature of 45°. None of the Cape Jasmynes or *Gardenias* are hardy. The *Kalmias* are all hardy, and require peat soil. They will succeed in a pot or tub if taken up with a good ball, and not placed in the greenhouse before the middle of January. They force tolerably well, and are sweet-scented. After flowering they should be placed out of doors, plunging the pots in coal ashes, in an open situation, and giving a good supply of water.

RETARDING PHAJUS GRANDIFOLIUS (F. W. S.).—The plant having now begun to throw-up its spikes, and as you do not wish it to flower until the first week in April, it should be at once removed to a greenhouse where there is a night temperature of 40°, in which it will not take any injury if kept rather dry. You will need to introduce it into heat early in March, but you must exercise some judgment in this respect, for if the spikes are only a foot high then, and the flowers barely showing, it will take nearly a month to bring them out; if they are less advanced, more. The plant may be worth 42s.

SUCCULENTS FOR GREENHOUSE (H. B. H.).—The leaves you enclosed to us appear to be those of *Scheveria undulata*. The reason you cannot find it in a catalogue, is its being generally known as *Cotyledon undulata*. A few succulents for a greenhouse are:—*Agave americana luteo-striata*, *Bonaparteia juncea filamentosa*, *Beaucarnea recurvata*, *Dasylium acrostichum*, *Yucca filamentosa variegata*, *Y. quadricolor*, *Epiphyllum Ackermannii*, *E. crenatum*, *E. Jenkinsii*, *E. Mallisonii* and *var. roseum*, *E. speciosissimum*, *E. speciosum*, and *var. superbum*, *E. truncatum*, *vars. purpureum*, *albo-lateritium*, *Ruckeriaum*, *Russellianum*, *Salmonium*, *splendens*, and *violaceum* *Snowii*; *Kalosanthes coccinea superba*, *K. miniata*, *K. Napoleon grandiflora*; *Styphelia taborica*, and *Rochea falcata*. These are fine either from their foliage or flowers. If you want some of the more curious—*Mammillaria caput-Medusae*; *M. elephantidens*, *M. sulcatanata*; *Opuntia senilis*, *O. Rafinesquina*, *O. cylindrica cristata*; *Echinopsis multiplex*, *E. Pentlandii sanguinea*; *Echinocactus cornigerus*, *E. gibbosus*, *E. myristigma*, and *E. tabularis*.

INSECTS (G. U. H.).—The grubs which have eaten the roots of your *Cyclamens*, &c., are the larvae of the very destructive weevil, *Olorhynchus sulcatus*. There is no other remedy than carefully removing and sifting the earth, so as to find and destroy every grub, for if but a very few be left, they will swamp your house next year.—L. O. W.

NAMES OF FRUITS (Rev. F. Symons).—1, *Bourré* Del; 2, *Easter Bourré*; 3, *Passe Colmar*; 4, *Thompson's*; 7, *Van Mons Léon Leclerc*; 8, *Vicar of Winkfield*; 9, *Knight's Monarch*.

NAMES OF PLANTS (T. L. M., Subscriber).—We are sorry we cannot name any of your plants, for they were all florists' varieties, which we never venture to distinguish. (*J. M.*)—1, *Doodia lunulata*; 2, *Blechnum occidentale*; 3 and 5, *Aspidium (Cyrtomium) falcatum*; 4, *Asplenium filicoides*; 6, *Chelidonium elegans*; 7, *Schizostylis coccinea*. (*C. F.*)—*Wormwood (Artemisia Absinthium)*. The flowers enclosed are all it ever produces. (*Robt. Miller*).

—*Cymbidium elegans*, *Lindl.* (*G. G.*)—*Scolopendrium vulgare*, *var. multifidum crispum*; *Gomphocarpus fruticosus*. (*McA.*)—1, *Tortula muralis*; 2, *Bryum* and *Hypnum* mixed; 3, *Racomitrium fasciculare*; 4, *Pogonatum aloides*; 5, *Sphagnum obtusifolium*.

POULTRY, BEE, AND PIGEON CHRONICLE.

NOTES AT THE GREAT SHOWS.

PREVENTED by a severe indisposition from undertaking the serious work I generally have on hand at the Crystal Palace and Birmingham, I wandered about this year a sort of "fancier unattached," or idle apprentice, and I am ashamed to say rather enjoyed it. It was pleasant to meet old and new friends, and have time to speak to them, without the pressing consciousness of work to be done; and instead of scanning the merits of pen after pen, to indulge my own individual fancy, and then turn to the general features of the whole. The one drawback was the serious accident which lamed Mr. Hewitt, and sent him home in hot haste as soon as judging at the Palace was over, and deprived Birmingham of his valuable assistance altogether, to the sad loss of that venerable Exhibition. He was missed by almost everybody, and his absence forced on many minds the reflection: What would the fancy do without him? Let us only hope that this contingency may not have to be faced for many years to come.

It was impossible to avoid comparing the Palace Show with Birmingham. The authorities of each had almost avowedly

made a race of it, and each had indulged in a game of brag. Well, there is no great harm in that; and it was clear to every impartial spectator this year, that each was going on a different track, and need in no respect feel jealous of the other, though it was highly amusing to hear the speeches of the respective partisans. Both prosper, and deserve to do so. The Crystal Palace was what the Yankees call "a great success," and had the proud Yankee distinction of being the biggest ever held, which, with other particulars, was duly set forth on the small bills. And the Crystal Palace is such a place for it! The "Giant Shanghae's awful crow" is in no danger of blowing the roof off, and there are few dark pens—a very few there were, whatever may be said to the contrary. The new limited classes, which were first proposed a year ago in this Journal, were well filled with good birds, and paid their way, many pens changing hands, and the old selling classes were as enormous as ever. In sober truth, one was almost wearied with the vast rows of birds; and I may be permitted to say, now it has been tried, that the plan of showing single hens and pullets increased the feeling. Every fancier agreed that this was a great mistake, the birds looked moped and listless, and hid away in the corners of the pens. Later in the season, when breeders want their birds, there may be reasons for the single-hen system, but in November these do not apply, and from a show point of view it was a decided failure, and I scarcely think will be repeated. Even the supposed gain to funds I fancy is a mistake, as the money gained in entries is lost in commission on sales.

The advantages of this Show are so great that it is a great pity minor causes of reproach should not be removed. The delay in affixing prize cards is a great nuisance to visitors on the first day, and the manner in which the awards are stated in the catalogue afterwards is the most inconvenient possible, and simply a disgrace to any exhibition of such high rank. A loose sheet, merely slipped in, containing only numbers and bare names without addresses, is really unworthy of such a show as this; and the Committee would do well to adopt some more efficient arrangement if they would retain the place they have acquired. The placing of coarse grit alone in the pens, again, was the cause of sad damage to the colour of all the white birds, which a little chaff scattered over it would have prevented.

With another and more serious complaint I have done fault-finding. This relates to the delay of birds, of which I heard many instances. I have myself no cause of complaint whatever, my own being returned in good time and first-rate condition, but others were not so fortunate. In every case I believe the delay to have occurred at some one of the interminable junctions which have to be passed to get to the Crystal Palace; and this being a necessity of the position, it would be worth while and would not cost much to post some person at each whose duty it should be to see all baskets promptly forwarded. It is not enough to see the work at the Palace is properly done; a little care at these tiresome junctions would be well repaid in the avoidance of those many complaints which have always followed on the "C. P." It is a grand Show, and it is really worth "doing" it well.

Still I may say I was, if possible, still more pleased with Birmingham, and have no fear our old friend will ever play second fiddle. The crowing of some of our London friends "in this connection" seems rather ridiculous. After giving the Palace full credit, it is still in all essentials a long way behind Birmingham yet. Selling classes at 40s. per pen are not what a fancier cares to see, and when these, which are a mere poultry sale—not a show—are deducted, Birmingham is even in numbers far ahead. This will be seen on comparing almost any of the standard classes. The date, too, is in its favour, giving as it does another fortnight for growth or moulting; and still more is the careful attention to those business details, want of which is the greatest blot on the Palace Committee, but for which Birmingham has always had such an enviable reputation. I do not wonder at it when I see how the old veteran names still "hold on." Long may they do so! They have hard work, but they do it as no other show in the world does; and they reap their reward in the immense classes (Dark Brahma cockerels were ninety-eight pens) which as yet stand above, and will always, I believe, keep this Show the rendezvous of the skilled fancier, while the Palace, no doubt, will take its place to a great extent as regards the mere sightseer.

Yet there were some blots here too, and in no carping spirit I point them out. The new arrangement of pens was a great improvement, but there were still some dark rows; though I believe this is to be remedied by still more skylights next year. But the new galleries, while answering admirably by daylight, had a fatal defect. When the gas was lit the heat and smell were absolutely sickening, and pregnant with danger to the Pigeons and fowls which occupied them. Many were Game hens, some of which were in wonderfully hard condition; but what state would they go home in after five evenings with the thermometer at 112°, to say nothing of the foul gas? If nothing else can be done to remedy this, the Show ought to be closed with daylight; the subject cannot but be dealt with, or disease

and actual deaths will compel its consideration. Another fault was in the drinking pans or saucers. Many of these seemed made purposely to turn over and make a mess with, and a sad mess they did make too. If tins which hang on outside cannot be obtained, the next best thing is an iron round pot with perpendicular sides, just the size and shape of a marmalade jar. These will go in the front corner, are not overturned, and do not get soiled by the scratching of the birds.

Another annoyance at Birmingham was the difficulty of finding the pens you wanted. The numbering was probably conducted on some occult system; but what this was no one could possibly find out, and up to the last I could not find a pen which a friend had written to ask my special opinion of. Certainly, I only had one day to search, and by Monday, or perhaps Tuesday might have discovered it; but the number of fanciers who were walking about disconsolate, and asking everybody wherever such and such a class might be found, was a new and rather ludicrous feature of the gathering. Surely some simple straightforward plan of numbering, as adopted at other shows, could be devised by a Committee which has overcome so many greater differences in its time.

It is curious that having nothing else to do, I have been all the time finding fault. Well, it is meant in no unfriendly spirit, and I had intended a few remarks on my own special favourites as observed at these two Shows, but this I must leave for another occasion.—L. WRIGHT.

MISTAKES IN CATALOGUES AT OXFORD AND CROYDON.

No one relishes more than I do a little good-humoured fun, even when the fun is poked at myself, but I think it is going too far when I receive letters asking how I can advertise a Brown Red cockerel, first prize at Croydon, when the catalogue distinctly states that Mr. Swift, of Southwell, was first in that class. Although feeling the laborious duties and great responsibility the secretaries and committees of shows have to contend with, yet out of justice to myself, and as advice to secretaries, I cannot let this matter pass without drawing their attention to the grave fact of allowing catalogues to be forwarded in all directions without first proving them to be correct. Much anxiety was caused in Worcester in respect to the first-prize Brown Red cockerel at Croydon. The second morning of the Show I received a letter and post-card in respect to my bird, first at Croydon: this I made known to the local fanciers. Friday morning came and no catalogue; Saturday morning came and no catalogue—"Two days after the Show—this should not be," neither were there any signs of poultry baskets; and some eight or nine fanciers came to and from the station, all anxious to see our pets at home "after so long a delay." *The Field* paper is thrown from a railway carriage, and like hounds on scent we follow, to learn the news—lo and behold! to me a great surprise—"First-prize Brown Red cockerel, R. Swift, Southwell." I thought to myself, Whichever is right—the letter or the paper? Then it was I did not relish the fun poked at me. Well, I thought, I have faith in my bird yet, as having won several prizes, and having been sent away in good condition; and not even a commendation! I said to myself, There must be some mistake. Mr. F— would not write me to purchase the first-prize bird, and know it to be wrong. So I resolved to content myself until the catalogue came to hand. I waited anxiously until half-past two, when the train ran into the station, and, hurrah! there are my hamper at last. All very anxious to see our pets we open the hamper, and I am sorry to say there is my bird—a dejected-looking creature. But joy again, I pull out of the hamper the first-prize card, and hold it up with glee to the fanciers present, who each said with me, "I cannot understand this." But no time for thinking; I made the best of my way home, and showed every care to my worn-out birds. At four o'clock, postman's knock, catalogue at last. With eager anxiety I look at the prize list, and sure enough Mr. Swift is first, and my bird not even a mention. I visit friends, and again I get the fun poked at me—in fact it was carried on so far as for me to win—perhaps I should not mention it here—half the value of the prize. As I still had faith, and remembered the good qualities of the bird, the letter, the post-card, and the first-prize card outweighed in my opinion the catalogue and *The Field* paper. In answer to my letters the Treasurer writes me—"You win first prize," and I also received a post-card from a well-known gentleman, who, in company at the show with a noted breeder of Brahmas, stated he pointed out the mistake in the catalogue to Mr. Nalder and Mr. Wiltshire, and also stated that Mr. Swift's bird was not in competition. This is my reason for giving a long detail of my annoyances, as I think if we cannot receive the catalogues for days after shows have closed, secretaries should see that they are correct, especially when the mistake is pointed out, before sending them away to exhibitors.

I should not have trespassed on your time and space had mine been the only case; but we find Mr. C. Dennison, of Halifax, writes to say that his birds were not in competition at Oxford

Show, and yet we find them mentioned in the catalogue.—
E. Winwood, Worcester.

EXPERIMENTING WITH LAYERS.

In the American "Poultry World," Isaac Lynde, of Ohio, gives the result of an experiment with different breeds of pullets in laying for six months, and the cost of their feed. On September 1st, he took ten pullets of each of the breeds mentioned below, about six months old, gave them a yard 40 feet square, with a comfortable house, and kept an exact account of eggs and feed, as follows:—

The Dark Brahmas ate 369½ quarts of corn, oats, and wheat screenings, laid 605 eggs, and weighed 70 lbs.

The Buff Cochins ate 406 quarts, laid 591 eggs, and weighed 73 lbs.

The Grey Dorkings ate 309½ quarts, laid 524 eggs, and weighed 59½ lbs.

The Houdans ate 214½ quarts, laid 783 eggs, and weighed 45½ lbs.

The Leghorns ate 231½ quarts, laid 807 eggs, and weighed 36½ lbs.

To make this experiment more complete, and to show which lot gave the most profit, including both eggs and flesh, we have supposed the fowls to be dressed and sold at the end of the six months at 20 cents per pound; also, that the eggs were worth 24 cents a dozen (2 cents each), and that the cost of the feed was 2½ cents per quart, or 80 cents per bushel. The figures would then be:

	Cost of feed.	Value eggs.	Value meal.	Total value.	Total profit.
Brahmas	\$9.22	\$12.10	\$14.00	\$26.10	\$16.88
Cochins	10.15	11.82	14.60	26.42	16.27
Dorkings	7.72	10.48	11.90	22.38	14.66
Houdans	5.55	15.68	9.10	24.76	19.41
Leghorns	5.77	16.14	7.30	23.44	17.67

The greatest profit on the investment is in favour of the Houdans, with the Leghorns next, and the Dorkings least. It would have been interesting, however, to know the weight of the eggs laid by the several varieties, to see what actual difference there was in the amount of food furnished by them, and its value at a fair estimate of weight. On such a basis it is quite probable that the Brahmas would have shown the greatest profit. And another item to be considered by investors is, that, where the fowls must be confined, a four-foot fence will answer for the large breeds, while for the light-bodied breeds 8 or 10 feet will be necessary, and even then their wings will have to be clipped. In addition, it is the general verdict that the large breeds bear confinement the best, and are more easily kept in good health, and from those vicious habits of plucking each other's feathers and eating their own eggs. But all breeds will give trouble enough in confinement if not furnished with plenty of employment, water, and food.

HARTLEPOOL POULTRY SHOW.

A FIRST Show was held at East Hartlepool on November 23th, and although the amount of the prizes was not great, the entries were nearly 460. The Market Hall in which the Exhibition was held, although spacious, was too small to accommodate the great number of visitors. The poultry pens were not of the most modern construction, and inconvenient for handling the birds—a point never to be lost sight of. They were placed in a double tier round the building. The Pigeon pens, quite new, were borrowed from Mr. Rule, of Durham, and being placed upon the flat tops of the crescent-like stalls, presented a very attractive appearance. In every other respect the Show was well managed, and the prize money was paid on the day.

Dorkings were very good, Dark birds winning all the prizes. The first and second-prize Cochins were adults and chickens respectively, and were Bufts of the highest order of merit. The third prize went to good Partridge. Brahmas were all of the Dark variety. The first-prize cock was of great size, but a little too light on the thighs, and the hen pretty good in all points. Second came a cockerel, full young for the show-pen, but mated with a grand hen; and third a splendid cock with but a moderate hen. Spanish were poor, except the first-prize pen. In Game, Reds were a fair lot, Brown Reds first and second, and Black Reds third. The gems of this section, however, were the first-prize Duckwings, grand in style, colour, and condition. Hamburgs had but two classes, which in our opinion is a great mistake, as five classes would be well supported. In Spangles, both first and second prizes went to Gold and Silver respectively. Of Pencilled, the first were Silvers not to be easily surpassed, and the second very good Golden. French fowls were all Houdans, the first being very perfect in comb, a point very much neglected in this breed. For Any other variety, splendid Polands were first, and Black Hamburgs second and third. Game Bantams were a very good lot, and many pens were noticed; the first and third were Black

Red, and the second Piles. Bantams of any other variety were an excellent class; the first and second prizes were awarded to Blacks, and the third to Golden-laced.

Of Ducks, Rouens were all good in size and quality of beak and plumage. The first two prize pens were very large. In the class for Any other variety, Aylesbury were first, Carolina second, and Widgeon third.

A valuable pen of Gold-pencils were awarded first in the Selling class, Black Hamburgs were second, and Brahmas third.

Geese, as is usual in this quarter, were large and good in quality, and of the White Embden variety; Turkeys were moderately good, Guinea Fowls poor.

The cup for the greatest number of points was won by Mr. Thomas Robson, of Bishop Auckland, with sixteen points, the Countess of Tankerville coming next with fourteen points.

Of Pigeons there were 235 entries, and the birds were shown singly. Almond Tumblers were an extraordinary lot, and the winners unusually good in all points, hens winning the first and third prizes, and a cock the second. In Tumblers, any other variety, the first was a very small Red Mottle, perfect in flight and tail; second came a Yellow, and third a Kite, both of which were very good in skull. In Carriers were many very good birds, although all the best were more or less overdone in trimming. Pouters were an extraordinary class. The first prize went to a Blue cock, grand in style and marking, and 19½ inches in feather, with 6½ limb. The second-prize bird was also a Blue cock, wanting in style, but 20½ inches in feather, and 7½ in limb; third was a White 19 inches by 6½, of grand style and carriage; many of the others measuring well. Barbs, the winners all Blacks, the first a smart young bird, and the second and third better in quality but wanting in condition. The winning Trumpeters were, first a splendid Mottle, and the second and third Blacks, the first two being extraordinary rose and hooded birds, while the latter was the best in leg-feathering. Fantails were a grand display, the three prizes going to one exhibitor. The first-prize hen was in tail such as is rarely seen, the tail being almost circular and nearly meeting at the bottom. Jacobins were good, a Yellow first, Red second, and Black third. Turbits were a capital class, with a Yellow first, Red second, and Blue third, and the whole class highly commended. Magpies were a fair lot, although some were a little soiled. A Red was first, a Black second, and a Blue third. Owls were a large class. The first prize went to a small Blue foreign bird, the second to a very good Silver English, and the third to a foreign Blue. In Dragons the winners were very good, a Blue cock being first, a White second, and Silver third. In the Any other variety, a Black Swallow was first, a Spangled Ice Pigeon second, and a Nun third. The birds in the Selling class were of but ordinary merit.

The cup for points in Pigeons was won by Mr. E. Horner.

Rabbits.—Among Lop-ears, first was a splendid Tortoiseshell doe 22 inches by 4½; and a Black 22½ inches by 4½, second; the latter, however, was in bad condition as compared with the former, though in other respects of high quality. The third was a Fawn buck 20½ inches by 4½, and in grand order. In the Variety class first came Himalayan, second Silver-Grey, and third Angora.

We published the list of awards and the names of the Judges, together with some other particulars, last week.

KILMARNOCK POULTRY SHOW.

(Concluded from page 437.)

THERE were 354 pens of Pigeons entered, and almost no empty pens, and few inferior birds. The Pouters and Carriers were all shown singly, all the other classes in pairs; Pouters having four classes, and numbering in all sixty-four entries. In cocks, Black or Blue, the prizes all went to Blues of rare quality; perhaps the finest-made bird in the Show was No. 372, a Blue, exhibited by Mr. James Millar, Glasgow, but only commended on account of being very badly ticked with black all over the wings, and foul in limb. In Pouter hens, Black or Blue, the first prize was awarded to a young hen of magnificent proportions, her only defect at present being an insufficient globe, but this will probably improve with age. Second and third were also Blues, and the fourth a Black, an immense blower. No. 895, a Blue hen exhibited by Mr. James Millar, pleased us exceedingly in the general sweetness of structure, having a crop of capital size, as well shaped and as neatly placed as we ever recollect having seen, which, taken in connection with her slim figure, made a Pouter such as we always admire, even when feather and limb are not above an average length. Pouter cocks, any other colour, were not a large class, but included some magnificent birds, particularly the first, which was a White of extraordinary proportions. The second was a well-known Red, which seems to have had a constitution of extraordinary quality to stand the amount of showing and winning which he has done. The third was a Chequer, a fine blower, and in show from the time he was penned until he left. The fourth was a

White. In Pouter hens any other colour, the first prize was given to a very lengthy hen, the second to a Chequer, which we believe has been a winner at some of the principal shows in the kingdom. Third and fourth were Whites. Old Carrier cocks, any colour, were an excellent class, the first prize being won by a bird first-class in beak, eye, wattle, and style, his only deficiency being in colour, which was not so good a black as it might have been; the second was also a good bird, but had recently been operated upon for spouts on the eye. Old Carrier hens, any colour, were not a very good class. The second-prize hen, we think, would have had a better chance had she not been so badly in moult. Young Carriers were a large and a good class, the first prize going to a Dun cock, which we fancy is a bird not likely to improve greatly. There were evidently two or three old birds exhibited here, and a few specimens were uncommonly well oiled, but we were glad to observe that no prizes fell to any of these. The special prize for the best Carrier was awarded to the first-prize old Black cock. Short-faced Tumblers were the best class of the kind ever seen here, not only in quantity but also for quality. The first-prize pair were Almonds, the hens being a little light in ground colour, but with excellent heads, and what we now so rarely see, beaks of the true Goldfinch type. The second-prize pair were Yellow Agates, and an uncommonly well matched and good pair too. Their heads were remarkably good; and their beaks, although only of the barley-corn order, had a style about them not often met with in this type. The third prize went to Kites, the fourth to Red Agates. The quality of the winners may be gathered from the fact that birds which have won at the Crystal Palace and other principal shows only succeeded in getting highly commended and commended. Barbs were a small class, the first and second pair winning easily. Trumpeters had one pair of birds excellent in all points; the second were good in rose and feet, but clearly inferior even in these to the first pair. The third were good in rose but poor in feet, and the fourth poor in rose but good in feet. All the prizes went to Blacks, which were better than the Mottles. The special prize for the best pair amongst the Short-faces, Barbs, and Trumpeters, was awarded to the first-prize Short-faces. Jacobins were not an extra class, the first prize being awarded to birds very superior as Whites. Fantails were an excellent class, mostly composed of Whites. The winners were wonderful in style, and some of them had good tails; but some birds were exhibited by Messrs. Loversidge and Yardley with tails of really wonderful build, but when this is not combined with great style it is quite impossible to win with a Scotch judge. Turbits seemed to us an extraordinarily good class, the first going to birds of excellent colour and good heads, but small enough in frill. The second-prize pen had one bird with an extraordinary frill, but both were of a poor colour. The third were uncommonly well-marked Blues, but rather Tumbler-like about the head. English Owls and Nuns were both good classes; in the latter a pair of excellent Reds won the first prize, not only on account of their rare colour, but because they were really excellent birds, having seven coloured feathers in each wing. Common Tumblers were an excellent class, the first prize going to Blue Balts, second to Black Mottles, third to Red Beards, and fourth to Blue-barred muffed-legged birds. Any other variety was an extraordinarily good class, the first prize being awarded to Frillbacks, the second to what is described as a newly-imported variety, but looking exactly like small Foreign Blue Owls, with the frill of a somewhat exaggerated type, the feathers being curled up under the chin, and continued nearly round the neck. In the Selling class the first prize was awarded to a pair of Pouters, well known in the district for the extraordinary-sized birds which they have bred. The produce of this pair includes the extraordinary Blue cock with which Mr. Horner, of Leeds, has been starring it at the English shows.

Canaries were both numerous, and good in quality. Very few prizes came to local fanciers, which should teach them that if they will sell their best birds, they must buy others as good or lose the position which they have so long held. We were sorry to notice that a few English fanciers had evidently not observed that the classes were for "Scotch fancy" only, as they sent Norwich to compete. The Goldfinch Mules were first-rate, the first-prize Yellow coming from the other side of the Border.

AIRDRIE POULTRY SHOW.

THE following prizes were awarded at this Show, held in the Market, Airdrie, on November 30th:—

SPANISH.—*Young*.—1, A. Walker, Kilmarnock. 2, A. Robertson, Kilmarnock. 3, S. Young, Motherwell. *Old*.—1 and 2, W. Paterson, Cambuslang. 3, J. Young, Hamilton.

DORKINGS.—*Young*.—1, W. Weir, Inches, Falkirk. 2, Mrs. A. Hair, Glasgow. 3, Z. H. Heys, Barrhead. *Old*.—1, Z. H. Heys. 2, A. McDonald, Easter Moffat. 3, W. Paterson.

GAME.—*Reds*.—*Young*.—1, R. Stewart, Kelty. 2, D. Harley, Edinburgh. 3, J. Sneddon, Linwood. *Old*.—1, J. H. McNab, Arthurrie, Barrhead. 2, J. Carson, Airdrie. 3, G. Williamson, Johnstone. *Any other Variety*.—1, Z. H. Heys. 2, D. Harley. 3, P. Hamilton, Wishaw.

BRAMS.—1, H. Wise, Bishopbriggs. 2, A. Robertson. 3, W. Weir. COCHINS.—1, H. Wyse. 2, J. Drinnan. 3, J. Wyse, Falkirk.

SCOTCH GREYS.—1, R. Clark, Dalserf. 2, R. Gibb, Newarthill. 3, J. Melklem, Thinnago Mill, Hamilton. HAMBURGS.—*Golden-spangled*.—1, J. Holburn, Stewarton. 2, T. Mackie. 3, T. Love, Chapelhall, Airdrie. *Silver-spangled*.—1, P. Crawford, Glenfield, Paisley. 2, J. Holburn. 3, R. Mackie, Stewarton. HAMBURGS.—*Golden-pencilled*.—1, R. Clark. 2 and 3, D. Gibb, Motherwell. *Silver-pencilled*.—1, T. G. Drummond, Glenfield. 2, Miss S. S. Lindsay, Glenfield. 3, J. Lochead, Kiltarchan. POLANDS.—1, A. Wyse. 2, Blair & Laird, Johnstone. 3, J. Forsyth. GAME BANTAMS.—1, J. M. Campbell, Bonny Kelley. 2, Z. H. Heys. 3, A. Kennedy, Kilmarnock. BANTAMS.—*Any other Variety*.—1, J. Lochead. 2, R. H. Ashton, Mottram. 3, A. Robertson. TURKEYS.—1, E. Robinson. 2, W. Weir. 3, W. Baird, Airdrie. ANY OTHER VARIETY.—1, A. McEllan, Bathhead. 2, W. Linton. DUCKS.—*Aylesbury*.—1, Z. H. Heys. 2 and 3, A. Robertson. *Any other Variety*.—1 and 2, A. Robertson. 3, P. Fletcher, Overton, Wishaw. SELLING CLASS.—*Cock or Cockerel*.—1 and 2, A. McDonald. 3, W. Paterson. *Hens*.—1, W. Paterson. 2, A. McDonald. 3, W. Baird.

PIGEONS.

POUTERS.—*Blue or Black*.—1 and 2, J. Miller, Glasgow. *Any other Variety*.—1, T. Yuill, Glasgow. 2, J. Miller. FANTAILS.—1 and 2, Blair & Laird. JACOBINS.—1, J. Frame, Larkhill. 2, J. Dunlop, Paisley. CARRIERS.—1, J. Miller. 2, J. Dunlop. BARBS.—1, J. Miller. 2, H. Paterson. TUMBLERS.—*Short-faced*.—1 and 2, J. Miller. *Any other Variety*.—1, J. Glen. 2, E. Robinson, Craig Elvan, Airdrie. ANY OTHER VARIETY.—1, J. Miller (Trumpeters). 2, A. Johnstone, Bathgate (Frillbacks).

JUDGES.—*Poultry*: Messrs. John Hamilton, Andrew Grant and John Jardine. *Pigeons*: Mr. James Huie.

GREAT YARMOUTH POULTRY SHOW.

THIS was held at Yarmouth, in the Rifle Drill Hall, on the 4th and 5th inst. No place can be more suitable for such a purpose. The Game were good, and the cup was won by a Brown Red cock in high condition. In *Dorkings* the cup was awarded to a capital pen of Silver-Greys, the second being Dark Greys. The *Spanish* cup was won with a grand pen of chickens, and the second-prize pair were also good, the class being much better than usual. The *Cochins* were in five classes, the cup being won with a capital Buff cock, though little was left for choice between that and a Buff hen shown in the next class. In single cocks, any other colour, the first was a Partridge, the second White, but in hens both the winners were Partridge. *Brahmas*, Dark cocks were not a good class, but the hens made compensation, being such a class as is rarely seen. The cup for *Brahmas* was awarded to the first-prize hen, which, for shape and marking, is almost unequalled. We confess some disappointment with the Light variety, however, for we consider the progress in quality we expected last season is not yet apparent, many of the best birds being somewhat yellow and the rest small. *Hamburgs* were not numerous, nor was their quality the highest, though the winners were good as a rule, and the cup awarded to a nice pair of Golden-pencils. Game *Bantams* were a large but irregular class, many of the best specimens being sadly out of order, and some being badly matched, though the first-prize and cup Black Reds were exceedingly good; the second were Brown Reds. There were some good birds in the Game Variety class of Bantams, and Blacks were first and second. In the Variety class, Crève-Cœurs were first and Black Hamburgs second. Both the Selling classes were very large, and there were some good and cheap birds. Ducks were poor in the mixed class, but the winning Mandarins and Carolinas were very smart.

In *Pigeons* was a close competition, the quality in most classes being extremely good; Mr. Jones took the cup with forty-six points, Mr. Hawley coming next with forty-four. The Carrier cocks were a nice lot. The first and second birds are ripe for work; both were Black. In hens a capital Dun was first, she being equally up for showing, and being very good in beak and wattle. The young Carriers were mostly Blacks, the winners being of that colour; the first, a very long bird and promising in all points, and the second falling little short in any point. Perhaps some of the best classes were the Pouters, there being an almost uniform measurement in both classes, and the style and condition left little to be desired. In cocks a Blue was first and White second, and in hens a White first and Black-pied second. Barbs were a fair lot, but one of the best birds, a Yellow, was ill, and sent away from the Show; the winners were Blacks. Barbs, young, a handsome Red first and Black second—a very good class. Tumblers, Short-face, Almonds were first and Black Mottles second, both pairs being of high merit. Tumblers, any other variety, were Red Mottles, which were about perfect, first, and Yellow Beards second, both pairs being Long-faces. Fantails were of fair quality, but not numerous; and Dragoons very good, Reds being first and Yellows second. Both pairs of winning Antwerps were Red Chequers, the first being about one of the most perfect pairs we have seen. In the Variety class a pair of nice White Trumpeters were first and Blue Florentine Runts second, nearly the whole class being commended. In the Selling class a very good pair of Fantails were first, and Blue Pouters second.

There was also a nice show of *Canaries*. The first eight classes, which were devoted to the Norwich varieties, fully bore out the high reputation of this county, the Dark-crested being

singularly perfect and attractive, the only class in the Show which may fairly be termed poor being the Mealy Cinnamons. Gold Lizards were very good both in delineation of cap and spangling, and the same may justly be said of the Silvers. The Selling class contained some good and cheap lots, but we have no knowledge as to what sales took place.

GAME—Black-breasted or other Reds.—Cock—Cup and 1 H. E. Martin, Sculthorpe. 2, J. Forey, Wolverhampton. Local Prize, S. J. F. Stafford, Great Yarmouth. *he*, W. Rayner, Ipswich. *c*, F. L. Salisbury, Market Overton. *Hen*—1, H. E. Martin. 2, R. Hair, Buxhall, Stowmarket. *he*, W. Rayner. *c*, J. Forey.

GAME—Any other variety.—1, G. Tricker, Fakenham. 2, W. Rayner (Duck-wing).

DORKINGS.—Cup and 1, Wren & Page, Lowestoft. 2, Henry Lingwood, Barking, Needham Market. *he*, J. Frost, Peckham; H. Brown, Putney Heath. *c*, R. Neville, Baschurch.

SPANISH.—Cup and 1, Nichols Bros., Camberwell. 2, Mrs. Tonkin, Bristol. *he*, W. White, Lowestoft; E. W. Stratford; H. Brown; P. H. Jones, Fulham; J. Thresher. *c*, A. S. Cooper, Great Yarmouth; H. Grist; W. Durrant, Great Yarmouth.

COCHINS.—Cinnamon or Buff—Cock—Cup and 1, Henry Lingwood. 2, H. Lloyd, jun. *he*, W. S. Powell, Oxford; G. S. Pearson, Great Melton; W. Woodhouse. *Hen*—1, H. Lloyd, jun., Birmingham. 2, W. P. Mathews, Gorleston. *he*, W. P. Mathews; G. S. Pearson; Henry Lingwood.

COCHINS—Any other variety.—Cock—1, T. W. Ains, Clapham (Partridge). 2, R. S. S. Woodgate, Tunbridge Wells (White). Local, G. S. Pearson (Cinnamon). *he*, C. Howard, Peckham. *Hen*—1, J. W. Taylor, Lowestoft (Partridge). 2, R. S. S. Woodgate (White). *he*, H. Lloyd, jun.; C. Howard. *Chickens*—1, H. Lingwood. 2, T. M. Derry, Gedney (Partridge). Local, G. S. Pearson (Buff). *he*, C. Howard. *c*, W. Saunders (Buff).

BRAHMAS.—Dark—Cock—1, C. Gay, Lynn. 2, Wren & Page. Local, W. P. Mathews. *he*, W. Brooke; C. Howard. *Hen*—Cup and 1, Wren & Page. 2, O. F. Cresswell, Bagshot. Local and *c*, G. S. Pearson. *he*, Dr. Holmes, Cheshirefield. *he*, H. Lingwood; T. H. Williams; R. Caborn, Biggleswade; H. Dowsett; W. Hargraves.

BRAHMAS.—Light—Cock—1, C. Tindall, Ipswich. 2, Horace Lingwood, Local, E. Bostock, Great Yarmouth. *he*, H. Dowsett; J. P. Case, Testerton. *Hen*—1, C. Tindall. 2, P. Haines, Palsgrave, Diss. *he*, H. Dowsett; J. P. Case.

BRAHMAS—Any variety.—Chickens—1, Col. Cockburn, Bracondale, Norwich. 2, C. Howard. Local, Misses E. W. Birch, Great Yarmouth. *he*, Misses E. W. Birch; P. H. Williams; Wren & Page; H. Dowsett; W. Hargraves, Scap; J. Long, Forest Hill.

HAMBURGS.—Golden spangled—1 and *c*, L. Wren, Lowestoft. 2, F. May, Wolverhampton. *he*, W. K. Tiekner. *Silver spangled*—1, W. Groom. 2, J. B. Bly, Lowestoft. Local and *he*, W. J. Nutman, Great Yarmouth.

HAMBURGS.—Golden spangled—Cup and 1, W. K. Tiekner, Ipswich. 2, J. W. Rust, Local, W. Lindsay, Great Yarmouth. *he*, K. H. Parker. *Silver spangled*—1, J. B. Bly, Lowestoft. 2, T. Hanson, Local, S. J. F. Stafford. *he*, D. C. Peckard, Chelmsford.

BANTAMS.—Game—Cup and 1, Miss Jeffries, Ipswich. 2, G. Morling, Lynn. *he*, J. P. Pearson; T. Heath, Norwich; W. Adams, Ipswich; J. R. Robson, Sunderland; Rev. T. C. Rose, Roydon Rectory.

BANTAMS.—Any other variety—1, W. H. Tomlinson, Newark. 2, B. F. Farrott (Black). *he*, T. E. Thistle, Lowestoft; W. Hingfield (Golden-faced Sebright); Hon. Mrs. J. H. Hoare, Seale; J. Ellis (White); L. Wren; M. Leno, Markate Street (Laced).

ANY OTHER VARIETY.—1, W. Cutlack, jun., Littleport (Crève-Cœur). 2 and Local, A. Wright, Yarmouth (Black Hamburgs). *he*, A. Page, jun. (Houdans); Miss J. Leathes (Crève-Cœur); Col. Cockburn (Golden-spangled Polands); W. Burrow, Diss (La Fliche); E. Cox (Po d'ans). *c*, E. Lantour.

SELLING CLASS.—Cock, Cockerel, or Drake—1, F. Passmore (White Cochins). 2, G. P. Tucker (Duckwing). *he*, Wren & Page (Brahma). *he*, D. C. Peckard (Silver-pencilled Hamburgs); T. P. Heath, Norwich (Cochins); T. Thornton (Game); L. Wren (Golden-spangled); W. Saunders, Lowestoft (Spanish); G. S. Pearson (Dark Brahmas); W. Hill (Light Brahma). *he*, J. P. Case, Testerton (Light Brahma); W. E. Martin (Brown Red Game); G. S. Pearson (Dark Brahmas); W. Hill (Light Brahma).

SELLING CLASS.—Hens, Pullets, or Ducks—1, F. Farlett (Coloured Duckwings). 2, W. P. Tucker (Duckwing). *he*, Wren & Page (Brahma). *he*, D. C. Peckard (Silver-pencilled Hamburgs); C. Sayer (Black Red); J. E. Bly (Silver-spangled Hamburgs); H. Dowsett (Dark Brahma); H. Hargraves; G. S. Pearson (Silver-spangled Hamburgs and Buff Cochins); Nicholls Bros. (Spanish); R. R. Parker (Gold pencilled Hamburgs); W. Hill (Cuckoo Cochins and Light Brahma). *c*, G. S. Pearson (Dark Brahma).

DUCKS.—Aylesbury or Rouen—1, J. N. Waite (Rouen). 2, A. Page, jun. (Rouen). Local, Misses E. W. Birch, Great Yarmouth (Rouen). *Any other variety*—1, W. Birns, Pudsey (Fancy). 2, M. Leno (Carolina).

PIGEONS.

CARRIERS.—Cock—1 and 2, L. & A. W. Wren. *he*, H. Yardley; G. S. Clements, Great Yarmouth (8); P. H. Jones; F. W. Metcalf. *Hen*—1, F. W. Metcalf, Cambridge. 2, P. H. Jones. *he*, J. Hawley; W. P. Keal; L. & A. W. Wren; H. Thurlow, Downham Market; G. S. Clements.

CARRIERS.—Young—1, W. Minson, St. Ives. 2, F. W. Metcalf. *he*, H. Turner; L. & A. W. Wren; G. S. Clements; W. Minson.

POUTERS.—Cock—1, W. Notage. 2, H. Thurlow. Local, W. Durrant. *he*, J. Hawley; F. H. Dows, Boston; H. Thurlow; R. Pratt (2). *c*, J. Hawley; P. H. Jones. *Hen*—1, H. Thurlow. 2, H. Pratt, Loxells, Birmingham. Local, G. S. Pearson. *he*, J. Hawley, Bingley (2); T. H. Dows; W. Notage, Northampton; R. Pratt.

BABBS.—1, H. Yardley. 2, J. Hawley. Local, T. Clements. *he*, W. Bulmer; W. Brooke, Bury St. Edmunds; H. Thurlow; C. Norman; P. H. Jones. *Young*—1, P. H. Jones. 2, H. Thurlow. Local, W. Simmons. *he*, J. Hawley; P. H. Jones.

TUMBLERS.—Short-faced—1, P. H. Jones. 2, J. Hawley. *he*, J. Hawley; W. Simmons. *he*, J. Hawley; W. B. Jones (Trumpeters). *c*, J. Hawley. 2, W. Birns. *he*, J. Hawley; W. B. Jones (Great Yarmouth). *c*, W. Hill.

FANTAILS.—1, P. H. Jones. 2, J. Hawley. Local, T. Clements. *he*, J. F. Loversidge, Newark; H. Thurlow.

DRAGONS.—1, L. & A. W. Wren. 2, W. Hill. *he*, L. & A. W. Wren; W. Notage, Northampton; W. Minson; W. Hill.

ANTWERPS.—1, G. Bentley. 2, J. Hawley. Local, G. S. Clements. *he*, J. W. Collinson, Great Yarmouth; W. Birns, Pudsey; H. Yardley.

ANY OTHER VARIETY.—1, P. H. Jones (Trumpeters). *c*, Hon. Mrs. Paget, Hoxne, Seale (Florentine Runts). Local, W. Simmons (Turbit). *he*, J. Hawley; G. Bentley (White Cucklets); S. J. F. Stafford (Bronze-wing Jap nesses); H. J. Dwelly, Peckham (Starlings); P. Passmore (Yellow Pigmy Pouters); L. Allen, London (Yellow Owls); W. Minson (Jacobins); P. H. Jones (Trumpeters and Jacobins).

SELLING CLASS.—1, P. H. Jones (Fanta 1). 2, H. Thurlow (Pouters). *he*, J. Hawley (2); Mrs. Clements (starlings); Hon. Mrs. Paget (starlings); L. Walkin, Northampton; S. J. F. Stafford (Japanese Doves); W. Bulmer, Spalding (Carriers); W. Brook, Bury St. Edmunds (Dun Barbs); W. Notage (Dragons); L. Allen (Jacks); G. S. Clements (Carriers); W. Minson (White Dragons); P. H. Jones (Barbs and Nuns).

CANARIES.

CLEAR.—Yellow—1, Collinson & Davison, Sprowston. 2, H. Lark. Local, C. Rumbold, jun., Great Yarmouth. *he*, C. Rumbold, jun.; Collinson & Davison. *Buff*—1 and 2, G. & J. Mackley, Norwich. Local, C. Rumbold, jun. *he*, R. Poole, Maldon. *c*, C. Quenton.

MARKED OR VARIEGATED.—Yellow—1, 2, and *he*, G. & J. Mackley. Local, C. Rumbold, jun. *Buff*—1 and 2, Collinson & Davison. *he*, C. Rumbold, jun.; G. & J. Mackley.

TICKED OR UNEVENLY-MARKED.—Yellow—1 and 2, G. & J. Mackley. Local, C. Rumbold, jun. *he*, F. Willis, New Canton; Collinson & Davison (2). *Buff*—1, G. & J. Mackley. 2, F. Willis. Local, C. Rumbold, jun. *he*, Collinson and Davison.

YELLOW OR BUFF WITH DARK CREST.—Clear—1, Collinson & Davison. 2, G. & J. Mackley. Local, J. W. Rust. *he*, G. & J. Mackley; Collinson and Davison (2). *Variegated*—1 and 2, Collinson & Davison. Local, J. W. Rust. *he*, J. Frost; Collinson & Davison.

KNYMN, JONGUE.—1, R. Poole. 2, J. N. Harrison. Local, C. Rumbold, jun. *he*, C. Rumbold, jun.; A. Palmer; Collinson & Davison. *Buff*—1, J. N. Harrison. 2, G. & J. Mackley. *he*, A. Palmer, Norwich. *c*, Collinson & Davison. *Marked or Variegated Jongue or Buff*—1 and 2, C. Rumbold, jun.

LIZARD.—Golden-spangled—1 and *c*, J. N. Harris, N. Belper. 2 and *he*, G. and J. Mackley. *Silver-spangled*—1 and *c*, J. N. Harrison. 2 and *he*, G. and J. Mackley.

ANY VARIETY.—Four Canaries in one Cage—1, G. & J. Mackley. 2, C. Rumbold, jun.; Collinson & Davison. *he*, C. Quenton, Great Yarmouth. *c*, C. Rumbold, jun.; Collinson & Davison.

SELLING CLASS.—1 and 2, G. & J. Mackley. Local, C. Rumbold, jun. *he*, C. Rumbold, jun.; Collinson & Davison. *c*, C. Rumbold, jun.; J. Cocks.

JUDGES.—Poultry and Pigeons: Mr. E. Hutton. Canaries: Mr. H. Thurlow.

YORK POULTRY SHOW.

This was held on the 3rd, 4th, and 5th inst. The awards were as follows:—

DORKINGS.—1, R. W. Richardson, Meaux Abbey, Beverley. 2, J. White, Waraby, Northallerton. 3, R. Smith, jun., Norton. 4, Rev. G. Hustler, Stillington.

SPANISH.—1, J. Thresh, Bradford. 2, R. Smith, jun. *Chickens*—1, J. Thresh. 2, Burch & Boulter.

COCHIN CHINA.—Yellow or Buff—1, J. W. Taylor, Ulverston. 2, J. White, Wakefield. 3, D. & J. Ibbotson, Whitby. 4, T. H. Readman, Whitby. *Any other variety*—1 and 2, J. White. 3, Rev. R. L. Story, Wensley, Bedale. 4, C. Sidwick, Kildesden, Keighley.

HAMMERS FOOTER.—1, G. Cart, Wilsden, Bingley. 2, T. S. Turner, Borough-bridge.

GAME.—Black-breasted or other Reds—1, R. Walker, Gomersall. 2, G. Sutton, Bootham, York. *Duckwings*—1, E. Woodburn. 2, Miss M. Aykroyd, Ecclesfield, Leeds.

ANY OTHER VARIETY.—1, R. Walker. 2, A. Martin, Rawcliffe, York. *Chickens*—1, Miss M. Aykroyd. 2, G. S. Thompson, Moorlands, York.

HAMBURGS.—Golden spangled—1, Burch & Boulter, Sheffield. 2, J. Walker, Birstwith, Ripley. 3, W. Driver, Keighley. *Silver-pencilled*—1, H. Smith, Morton Banks, Keighley. 2, T. Hanson, Thwaites Bank, Keighley. 3, J. Walker.

HAMBURGS.—Golden-spangled—1, J. Walker. 2, G. Holmes, Great Driffield. 3, Burch & Boulter. *Silver-spangled*—1, R. Newblitt, Epworth. 2, G. Hager, J. Walker.

POLISH.—1, Mrs. Lloyd, Cowesby Hall, Northallerton. 2, W. Bearpark, Ainderby Stickle.

BANTAMS.—Game—1, R. Newblitt. 2, J. Hewson, Welburn, York. 3, Misses Ellorby & Haynes, Easingfold. *Any other variety*—1, Burch & Boulter. 2, G. Harrison, Newton-on-Derwent.

ANY OTHER VARIETY.—1, Miss B. Peirse, Bedale. 2, T. H. Readman, Whitby. 3, R. Smith, jun., Norton, Malton. 4, G. Foulner, Kirbymoorside.

TURKEYS.—1, H. Crossley, Halifax. 2, Mrs. Story, Stokely, Poults. 1, B. H. Brooksbank, Tickhill, Rotherham. 2, Lord Venlock, Essex Park.

GEES.—1, J. White, Wakefield. 2, Mrs. Story.

DUCKS.—Aylesbury—1, W. Storchouse, Whitley. 2, Mrs. Story. *Rouen*—1, J. White. 2, R. Gladstone, jun., Liverpool. *Any other variety*—1, W. Silvester, Sheffield. 2, R. Gladstone, jun.

SELLING CLASS.—1, R. W. Richardson. 2, J. White. 3, C. Carr.

PIGEONS.

CARRIERS.—Cock—1, J. Hawley, Gillingham, Bradford. 2, E. Horner, Harewood. *Hen*—1, W. Massey, Spalding. 2, K. Horner.

POUTERS.—Cock—1, Cup and 2, J. Hawley. *Hen*—1, J. Hawley. 2, Mrs. S. Ladd, Seale.

TUMBLERS.—Almond—1, J. Fielding, jun., Rochdale. 2, J. Hawley. *Any other variety, Short-faced*—1, J. Hawley. 2, G. Linfoot, York.

FANTAILS.—1, E. Horner, Harewood, Leeds. 2, G. Fletcher, Acomb Landing, York.

TRUMPETERS.—1 and Cup, E. Horner. 2, J. Hawley.

BARBS.—1, E. Horner. 2, R. Wade, Halifax.

JACOBS.—1, R. Wade. 2, R. Wade.

TURBITS.—1 and 2, G. Fletcher.

OWLS.—1 and 2, J. Fielding, jun., Rochdale.

NUNS.—1, W. Croft, Killinghall, Ripley. 2, E. Horner.

DRAGONS.—1, R. W. Richardson. 2, E. Horner.

ANTWERPS.—1, H. Yardley, Birmingham. 2, J. Stanley, Blackburn.

ANY OTHER VARIETY.—1, W. C. Dawson, Osby. 2, J. Thompson, Bingley.

SELLING CLASS.—1, J. E. Crofts, Blyth, Workop. 2, J. Thompson. 3, K. W. Richardson.

RABBITS.

LOP-EARED.—Self-coloured—1 and Plate, J. Cranch, St John's Wood, London. 2, Dr. W. B. Boden, West Hartlepool. *Yellow and White*—1, H. Cawood, Thorne. 2, A. H. Easton, Hull. *Tortoiseshell*—1, A. H. Easton. 2, F. Banks, London. *Black and White, or Blue and White*—1, T. Taylor, York. 2, C. King, St. John's Wood. *Grey and White*—1 and 2, A. H. Easton.

HIMALAYAN.—1, S. G. Hudson, Hull. 2, J. Baron, Rochdale.

ANGORA.—1, C. Auton, jun., York. 2, A. H. Easton.

DUTCH.—1, S. G. Hudson. 2, A. H. Easton.

SILVER-GRAYS.—1 and Plate, A. H. Easton. 2, S. G. Hudson.

ANY OTHER VARIETY.—1 and 2, W. Whitworth, jun., 1 on sight, Manchester.

SELLING CLASS.—1, R. Dobson, York. 2, W. Whitworth, jun.

JUDGES.—Poultry: Mr. J. Dixon, North Park, Clayton, Bradford; and Mr. T. Dodds, Mount Pleasant, Wakefield. *Pigeons*: Mr. J. Gell, Kingston-upon-Thames; and Mr. H. Brown, Walkley, Sheffield. *Rabbits*: Mr. C. Rayson, Ivy Lodge, Didsbury, Manchester; and Mr. J. Hume, York.

RABBITS.—Twenty-nine Lops, fifty of other varieties, and a selling class of thirteen. They were all well fed and in roomy pens. The Self-coloured class (seven entries), presented some good specimens, and the first cup given for the best Lop in the Show was awarded to a Sooty Fawn. As this Rabbit is not nine months old, there is evidence of great promise, as the ears are of great length, and the general form and carriage are good.

The second-prize was a Black buck scarcely ten months old, of clear glossy jet, so desirable a shade, and free from the brown tints found at times in otherwise good specimens. The other pens were also more or less attractive, and the class was decidedly good. The Yellow-and-whites (five entries), were also quite up to the average, and the young first-prize, not quite six months old, was worthy of its position. The second-prize taker was also good, well marked, and a promising Rabbit for seven months. The Tortoiseshell (four entries), were of rare merit; and the doe, first in honours, deserved her position. She is probably larger than most of her class in general, and in marking excellent. The second-prize specimen was a fitting companion. The Black-and-white or Blue-and-white (five entries), we considered a valuable class, and the first-prize as a six-and-a-half-months specimen is by no means devoid of merit, both as regards ears and general marking. The same applies to the seven-months-old, second in rank, as a well-formed and promising animal, for if such positions are obtained when Rabbits are not fully matured, there are great expectations for the future. Of the Grey-and-whites, the prize pens were equal to their position. For the first-prize seven-and-a-half-months specimen we infer from the present an equally enviable rank at future exhibitions. The remaining pens were valuable, and in some points almost equal, probably; but the prizes were for all properties, which we think by far the best and most honest. As a whole, the Lops in their sub-division into five classes were all good, and seldom if ever do we see better. The Himalayan (seventeen entries), were a splendid class with two or three exceptions, and some pens were equal in size, or probably beyond the average. This variety is uncertain as to its permanent fitness to exhibit, yet only some four or five were moulting, and so unfit for favourable comparison with their neighbours presenting the dark points, all-important for high positions. The first-prize doe was an excellent specimen, large and uniformly marked—a combination of excellences not always to be attained. The second-prize doe is of great promise as a five-months-old specimen, and a first position, we think, will be hers ere long. The feet in too many instances presented the grey or less desirable shade; most of them presented the acceptable appearance of ears and nose.

The Angoras (seven entries) were scarcely equal to what we have seen. Some were moulting, and consequently void of that fine fleecy silk-like wool so desirable, yet there were some good pens. The doe of Mr. W. Whitworth (the largest exhibited) was too good to escape notice, and when in full wool must present a magnificent appearance. Some others scarcely presented the soft curly quality of wool so desirable, yet were well-formed and tolerably large animals. The "nice" Dutch (ten pens) were as varied in points of marking as in colour. The first-prize, a Grey doe, is a neat specimen, and the most perfect in all points. A Blue buck was of sufficient merit to take the second prize. A Black, a Lemon colour, and also a Yellow or Light Fawn of large size, were exhibited, were all of great merit, and the class generally was decidedly good.

The Silver-Grey (eight entries) was with one or two exceptions a valuable class, so general in the silvering—that brightest clear shade—to the very tip of nose, and large in size; a combination of these two essential points must insure a high position, and such excellence was evident in the doe, the winner of the first prize and cup for the best Rabbit in the Show, Lops excepted. Mr. S. G. Hudson's eight-months-old doe was a valuable sharer in the honours, being well silvered, larger than many we find. The others were good but smaller, and one or two exhibited well, when matured, we doubt not come to the front.

The Any other variety class, eight entries, presented a magnificent specimen of the Patagonian, a buck, also an equally good Belgian Hare doe. For shade of fur, size, and general form we seldom, if ever, have seen more perfect specimens. We regret that there was no class for that useful Rabbit the Belgian, and trust the future schedule will include one. The pretty Siberians were an agreeable contrast to the Self-coloured specimens described; and a Polish Rabbit was also found in this class. The Selling class, thirteen entries, contained a Yellow-and-white Lop buck first, and that deservedly, and a Belgian doe second. The other pens were good, and far above the average of this class.

PECKHAM PIGEON SHOW.

THE South of England Pigeon Society held their first Exhibition of Homing and Fancy Pigeons at the Rosemary Branch Assembly Rooms, on the 6th and 7th inst.

The names of the Committee are generally known in connection with the Homing variety, and their friends on this occasion mustered very strongly, the Homing birds in numbers exceeding all the other varieties combined. Many of them belonged to members of the Society, and were not entered for competition, their owners being quite satisfied with the admiration they created, and appearing to feel great pleasure in relating the history of the travels of some of these wonderful birds. The Judge's task in connection with these classes could not have

been easy, and we are pleased to record that his awards were received with general satisfaction. The common practice of liberating the birds was adopted in one of the classes.

Of the other varieties there was a good entry of Dragoons, the birds being of a quality that would have been creditable to a Show of much greater pretensions. The Jacobins and English Owls were also deserving of attention. In the latter classes the first and second-prize birds were entered at the small price of one guinea—bargains which were quickly caught at.

The Show deserves better support than it appears to have on the Friday, and we are pleased to learn that at the reduced rate on Saturday the attendance was much larger. The general arrangements were satisfactory; possibly had the tables been a little higher the birds might have been seen to more advantage, as the continuous stooping to examine their properties becomes irksome and tiring. In other respects nothing was left to be desired; and the Committee, which includes the names of Messrs. Sparrow, Burlington, and other veteran supporters of flying birds, must feel a great satisfaction in finding these recent outcasts now absorbing so much attention, and occupying such a prominent position in a Pigeon show.

A PIGEON FANCIER'S SECOND VISIT TO BIRMINGHAM.

SEVEN years—just seven, a good portion of man's short life—have passed since, for the first time, I saw Birmingham and its famous Show, known all over the United Kingdom. I then wrote a couple of papers entitled "First Impressions of Bingley Hall." Now seven eventful years have rolled over, eventful in the great world of statesmen and in the small world of poultry fanciers, and I again bend my way towards Birmingham—"mother Birmingham," for there—was it not in 1846?—the very first poultry show was held; and the old dame still holds up her head, though she may perhaps be heard to say, "Drat that Crystal Palace. Think of the upstart beating me!" Still, "mother Birmingham," we respect you, and we pay to you all dutiful regard. So, slightly parodying Lord Macaulay, I say—

"Oh Birmingham! oh mother Birmingham! to whom the fanciers pay
A fancier's heart, a fancier's life, take thou in charge this day."

But I am not there yet, and of course it will rain on this important Monday, December 2nd. It has been raining for weeks—so great and continuous the rainfall with us in the west, that this was inserted in a Bristol paper, "Remarkable weather.—No rain fell in this city on Tuesday last." But Monday comes, and it does *not* rain—think of that! I start, then, with a more cheerful atmosphere around me; but, though not raining, the rain has left its "water mark" on the country—floods both sides of the railway in parts; and when I get to Oxford nothing but floods for miles. I wonder Oxford men boast so about their *alma mater*. Why, I never saw the water out near my Cambridge to such an extent. But then, Oxford men will brag to the end of the chapter. They cannot get over King's College Chapel, Cambridge, being superior to anything they have in Oxford. Train late: of course it is at the time of the great Show. "All owing to the Birmingham luggage," says a cross voice at Leamington station. But when the bright day, for no rain, is beginning to grow dull and misty (for is it not November, when bright days must be brief days?) I enter Birmingham. Grand station this at Snow Hill, and grand hotel to match. Soon I am trudging along the black, miry, busy streets of the great midland metropolis. There is the Town Hall with its Athenian look, but no Athenian sky above it; there's the turn to Bingley Hall, here's the entrance. The cattle are lowing, the cocks are crowing within, and now and then the Geese set up a chorus of cackling, and the Ducks give the time in quacks.

I note improvements in the seven years, chiefly that a narrow gallery runs all round the poultry part, and in that gallery are the Pigeons, instead of being in part of a gallery round the cattle. Looking down, the poultry are seen row after row in cross rows beneath me: this is the chief improvement. In numbers, too, there is advance. In 1865 there were—I quote from memory—315 pens of Pigeons; now there are 389 pens. But is it possible that I see the old wooden whitewashed pens with only iron-bar fronts? In these days of galvanised wire cages, and specially of the elegant beehive cages, oh! mother Birmingham! you must be a holder-on to old-fashioned ways with a vengeance. Mr. Billett must come and improve you, for wood is very heavy-looking. Now, one had the Palace Show in one's very eyes still, so that, in spite of the proverb "Comparisons are odious," I could not help comparing the two. First, the numbers are fewer, but a good fancier says the birds are better. Another says, "No such thing. The Palace is the Show, and will be the grand Show for ever. Birmingham was, but the Committee offered no cups, and so the Show has suffered. There are not even so many birds as at the summer Show." How are such statements so opposite to be reconciled? I think easily. In some classes, notably in the Short-faced Beards and Balds and other Tumblers, Birmingham beats the Palace, in

other classes not; in some classes few and choice, in others certainly inferior, as in Fantails, Turbits, and Pouters. Evening is coming on, the gas is being lighted. "You will not be able to stand the heat long," says one near me. And he spoke truly. First off came my great coat; but still I am frying, the heat does ascend so, and soon I give in and go off to the dog show. As I pass out of Bingley Hall I notice, united in one large frame, the original drawings in water colours by our Mr. Ludlow of the illustrations of our Mr. Wright's new "Poultry Book." Quite a feature this of the Show. Verily it is well for all fanciers that an artist has been found who would take such great pains as to represent carefully the various points. One thing also I must notice—that I was glad to see large posters calling the attention of all Birmingham's visitors to the fact that there is such a periodical as the "Poultry Chronicle," which, being part of THE JOURNAL OF HORTICULTURE, has, by being joined to its larger partner, been apt to lose its identity. When a woman marries she loses her maiden name; but when Miss Poultry Chronicle wedded Mr. J. or H. she was joined to him, but, mark you, has not lost her name, nor her nature, nor yet her importance.

I find the dog show wondrously improved since 1865. What mastiffs! what bloodhounds! what pugs! what Dalmatians! None too many of any kind except of those fancies of the hour among young men, I mean, of course, fox terriers—not to be compared, in my humble opinion, to the good old-fashioned bull terrier, or English terrier, either white, or black and tan. I chanced to witness an interesting scene of recognition. Mr. Calf, of Devizes, exhibited and won a prize with a magnificent rough-coated St. Bernard, age three years. His old feeder, who had not seen him for two years, was brought in front of him. The grand animal looked at him, knew him in a moment, put into his eyes such beams of affection, then put up to his old master his massive right paw—right hand one might call it, for it was done so humanly—then gave the other paw to shake, like a warm-hearted friend who grasps an old chum with both hands. Truly it was a pretty scene, and I would not have missed it for much. Evening, and almost night has now come, and I, tired but not weary, give up sight-seeing until the morrow.

December 3rd. Another fine morning. Verily that clerk of the weather has learned better manners. In good time I am again at Bingley Hall, and stand in front of the first class of the Pigeons—viz., *Almond Tumblers*, eight pens. These are very good, and the prizes go to those two terribly fortunate F's in the Almond fancy, Messrs. Fulton and Ford.

Carriers, all through—Blacks, Duns, and Any other colour—though not very numerous, were as a rule picked specimens; and I was pleased to see that Birmingham men were numerous among those who had their birds noticed, though the London men get a good share of the actual prizes.

Pouters.—These were much too few—in three of the classes only three birds in each class, and actually only two entries in one class. There was a very large-cropped bird in Class 118. Blue hens deservedly commended belong to Mr. Harvey. The two prize Yellow cocks were grand birds.

Barbs.—Blacks good, and the Red cock first prize, a bird with a magnificent skull.

Short-faced Balds or Beards.—A strong and good class, a great improvement on the Crystal Palace; good Balds of all colours, and good Yellow and Blue Beards. In more than one pen a Silver and Blue were shown, which was a pity. No Pigeon is prettier, natter, and more sprightly than a good Short-faced Balthead.

The Birmingham speciality, the Long Muffed *Tumblers*, were shown in goodly numbers, the plumage for the most part resembling their Short-faced brethren; but they have a Trumpeter look, and lack to my mind neatness.

Hunts.—Few as usual, and colours as usual.

Jacobins.—A very nice class. Good Yellows, Reds, Blacks, and Whites.

Fantails.—Not so strong and good a class as at the Palace.

Trumpeters.—Better in quality than numbers.

Foreign *Owls* very few. Among the English *Owls*, the *Nuns*, and *Turbits* were some choice birds.

Some of the Blue *Dragoons* revealed a touch of silver in their feathering. The only two pairs of Silvers shown had blackish bars. A pair of yellow *Dragoons* took first prize among several of that colour and one pair of Reds.

The Yellow *Maggies*, first prize, were charming; the second, Black, were nice.

Antwerps throughout were strong well-made birds, and looked up to work.

Among the *Terns* or *Sea Swallows* was a beautiful pair of Yellows, first-prize, belonging to Mr. Beldon.

The last class, Any other distinct or new variety, showed to the looker-on many prettily feathered birds with pretty names—Pencilled Blondinettes, Blue Blondinettes, Hyacinths, Brunettes, &c. This class always reminds me of very pretty girls without much expression or intellect.

Such was Birmingham Pigeon Show. The arrangement of

the classes was a puzzle, as the pens did not run according to catalogue. This is provoking, and causes much extra walking.

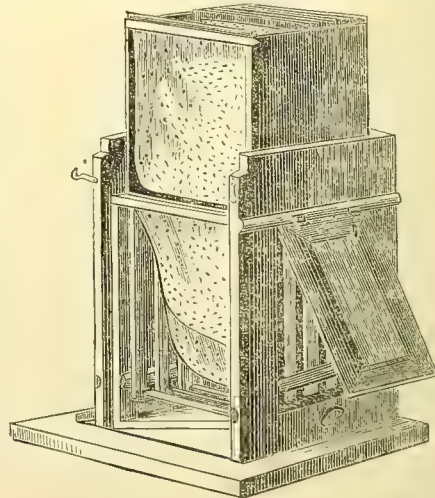
Lastly. Let me revert once more to my former visit. I have said it was seven years ago. Now, much is forgotten in seven years. Then a poor but worthy gardener and rising writer named Chitty had recently died and left a widow and half a dozen children. I had done a little towards getting the widow and orphans some pecuniary help. I thought the very name had now become forgotten, until I saw a writer refer to Mr. Chitty a few weeks since. Well, seven years ago I was the invited guest of poor Chitty's master, Mr. T. Webley, of Selly Oak, near Birmingham. I never forgot the host and hostess and the pleasant visit, and intended to call upon them before I left Birmingham. But in the dog show I met Mr. Webley, who would and did carry me off from my hotel to his hospitable home; and although I, like Falstaff, can "take mine ease at mine inn," still I need scarce say that a friend's house beats all the inns in the world. A renewal of acquaintance is always charming, and a warm welcome and a talk over past days serve to cheer a drooping spirit, which, alas! mine has lately become from the saddest of all bereavements. How nice, how very nice then, it was to be again with my cheery friends of The Uplands, Selly Oak!—another example, one of so many, of the friendships made by me through "our Journal."—WILTSHIRE RECTOR.

LOWESTOFT POULTRY SHOW.—There are twenty-three classes for poultry with three prizes in each, and a local prize of 10s., and there are eleven silver cups offered for competition. In Pigeons, of which there are thirteen classes, there are also three prizes in each class, and a cup is offered for the greatest number of points. The Judges advertised are the Rev. Thomas Fellowes and Mr. E. Hutton.

APICULTURE IN AMERICA.

THE growth of interest in the management of bees among our American cousins is evidenced by many facts, among which we notice the following.

This autumn a Mr. Dadant, agent of the Italian Bee Company, made an expedition across the Atlantic to Italy. After spending a month in the effort to collect a sufficient number, "all that he could purchase were 348 in number." We imagine that our less enterprising people will have obtained but few this year for the English market. Of these, however, only sixty-nine reached New York alive, a number wholly inadequate to the demand. Disastrous as was the result of Mr. Dadant's mission, which cost not less than 1200 dollars (nearly £250) the Company is not disheartened, but meditates another raid into Italy next autumn, especially as the good result of this temporary failure has been a discovery how to pack the Italian queens and bring them over with very trifling loss.



American Bee Hive.

Another proof of the extent of improved apiculture in the States will be seen from the following notice in their "Bee Journal." "Before the great fire we shipped several thousand hives annually from our Chicago factory. Last year we were compelled to ship from other points, or advance our published prices. We have just returned from Chicago, and are glad to announce the opening of a new factory under auspices more favourable than ever before." Subjoined is a sketch of the popular hive thus made at Chicago, which can be had in

New York complete for 3 dols. 75 cents, if two or more are ordered. It is a moveable comb hive.

The "Bee-keeper's Journal" itself is sufficient proof of the growing importance of this branch of industry. Four full-sized pages are devoted to bees and all matters connected therewith. The remaining four pages are occupied with agricultural matters. Its cost is very moderate—one dollar per annum, payable in advance.—B. & W.

HIVES.

I HAVE read Mr. Pettigrew's letter on the exhibition of honey and hives (see page 373) with some interest, and I was glad to see him anxious to introduce hives of wood and glass, notwithstanding his expressed aversion to these materials in former letters. Now that he has changed his mind, I may hint that the Stewarton hive is the most profitable as well as most ornamental hive in use, and that he could not do better than introduce it largely at his show. He might be coaxed to give the "heavy, clumsy, squat, flat bar-frame hives" a fair trial, like other intelligent bee-keepers. I have no doubt but he would find far more utility in these hives than he is aware of, or ever found in the large, clumsy, squat, flat receptacles for every kind of vermin destructive to bees—viz, the very old-fashioned large one-domiciled straw hives used centuries ago. By whom this was invented I know not. I showed to a friend the Journal containing Mr. Pettigrew's letter as well as Mr. R. Symington's, and he at once showed me a number of straw hives more than a century old, which belonged to his great grandfather. These hives measured no less than 2 feet by 1 foot 2 inches. I quite agree with Mr. R. Symington, and I think Mr. Pettigrew will acquiesce, that the invention of large hives is not due to him.

Notwithstanding the very few honey days we had this season, some Stewarton hives near me, and which I sometimes look to, are of the enormous weight of from 100 lbs. to 150 lbs. But it is a matter of little consequence as regards producing qualities what the material is; it is the system, by adding room gradually. This, then, is the Stewarton system, and wood is the best material for the construction. In 1864, with only six Stewarton hives, one bee-keeper cleared no less than £30 sterling for honeycomb, besides a surplus of 30 pints, of 5 lbs. to the pint, of drift honey.—A LANARKSHIRE BEE-KEEPER.

WINTERING BEES, FEEDING, &c.

I READ with much interest your extract from the *Chicago Tribune*, signed "ELLA." We have no little to thank our American cousins for in bee matters, as witness that most interesting and exhaustive of all bee books, Langstroth's celebrated work, without which no apian library can be complete. The idea which "ELLA" gets from her "Uncle Jim" on the subject of the ventilation of bees in connection with the wintering of bee hives is very suggestive. I have often thought that bees must be frightfully chilled when a cold north-easter is blowing right into them, if facing that quarter, as not a few of our hives do. This certainly might be avoided by closing the entrance in winter, and, if need be, opening a hole at the top of the hive, covering it with a piece of perforated zinc or an empty hive. I have been trying this plan the last few days, and have observed a marked effect upon the bees. Instead of crowding together as they did when the entrance was open, they spread themselves out as in warmer weather, without seeming to need the fresh air. In one or two cases I have not even opened the top hole, but this only in large hives which contain casts, and are not full of comb. I intend to carry this on during the winter, opening the entrances in warmer weather, and closing them during snow or cold east or north winds, certainly by day. As all my hives are wooden boxes with the entrances let into the floor-board, I have only to draw them backwards an inch or so, as the floor-boards are longer than the boxes, and they are at once confined. In other cases a bit of wood must be cut to fit the entrance.

As to feeding bees, I have tried all sorts of feeders, like Mr. Fox, and have found none equal to the bottle-feeder, and yet it sometimes fails. I attribute this partly to the food being too thick or too thin. In the former case it will not run freely, and there is a concavity in the lino covering of the bottle, which prevents the bees from getting at the food. In the latter case it will sometimes run so fast as to flood the hive below and waste itself. But there are other causes of the failure of the bottle, as, for instance, where the bees have to ascend by a hole through a thick roof-board, or where they are too few in numbers, and the temperature of the hive is too low to induce activity, or, perhaps, the feeder is remote from the spot where the mob of bees are gathered. The only other plan of feeding, which I sometimes adopt, is to fill the cells of a piece of empty honeycomb on one side, and lay it flat near one of the holes at the top of the hive. This must, of course, be covered over with a box or hive of straw. If we could give them a sufficiently large piece of comb with deep cells, and fill them all

carefully as fast as they are emptied, this would certainly be the best of all ways of feeding, as they will take down in twenty-four hours from 10 to 12 lbs. of food. Otherwise it is a messy plan, very troublesome, and it induces a great deal of restlessness and fighting in the apiary. Still I have had recourse to it this autumn, and with good success. I greatly prefer the bottle, with which I am still feeding when the weather permits—that is to say, whenever the bees are abroad.—B. & W.

Mr. Lowe has given a very timely and sensible caution with respect to the feeding of bees in your recent number. I am one of those unfortunates who have lost not a few valuable hives owing to the fact he mentions—namely, that bees will die even in the midst of plenty, if they happen to be clustering in a part of the hive remote from such stores. Therefore I strongly recommend that every hive should receive a few pounds of food in the early part of November, and even later, should the weather permit. This they will take care to store away within easy reach.—B. & W.

THE SILKWORM DISEASE.

At the congress of silkworm breeders lately held at Roveredo this subject attracted much attention, being of the greatest importance to French and Italian cultivators, mostly small farmers and country schoolmasters. The disease has now been raging for some years, and experiments have been tried to check it. Professor Pasteur, a French breeder, advised the breeding of healthy moths. "Healthy parents," said he, "will produce sound eggs, and these vigorous moths." His advice was followed, and a successful result obtained. Six hundred pairs of healthy moths gave healthy eggs, and these healthy worms. It was now necessary to separate moths attacked by the disease from the healthy ones, thereby preventing the mixture of eggs of diseased parents with those of a healthy stock.

To obtain this result, the well-known Italian silkworm breeder, Susani, has adopted an ingenious proceeding. He puts a male and female moth into a little tulle bag about 4 inches long and 2 inches wide. Two bags, after being closed, are tied together, and suspended on a wire in the same way that a printed sheet is hung up to dry. After the female has deposited her eggs on the tulle, both moths, which, as is well known, soon die, are taken out of the bag, put into a mortar, and crushed to powder. Distilled water is then poured on this powder, and a drop of it examined under the microscope. If the drop appears clear both moths were healthy, and it is right to conclude that the eggs are healthy. Should, however, a glass-like crystalline body of oval form be observed in the drop, the eggs are doubtful, and are collected separately; if two such bodies appear, the tulle bag with the eggs is at once burned, and the water collected in a separate vessel. The water, accumulated from one thousand examinations, is once more tried by an experienced microscopist, and his calculation must correspond with the above figures. Susani employs twenty-five girls during the whole of the winter for these examinations. They are said by an observer to be very clever at their work. Each girl makes two hundred examinations daily, and there are sometimes as many as 500,000 bags at a time hung up in the large room in which the examinations are carried on. This tedious proceeding has proved very effective, and Italy will be able in time to free her soil from the ravages of this disease. By allowing only healthy parents to propagate offspring the spread of the disease will be prevented.

The next congress of silkworm breeders will take place in 1874, at Montpellier (Hérault); we notice among the names of the committee those of Professors Dumas, Pasteur, Haberlandt, Cornalia, &c.—(Land and Water.)

OUR LETTER BOX.

BERWICK ORNITHOLOGICAL ASSOCIATION.—We are glad to find the Show was well attended. The report and prize list arrived too late for insertion this week, but will be given in our next number.

CHRISTMAS BOOKS (Mrs. L.).—The two books you have been recommended are very suitable. Give "Anecdotal and Descriptive Natural History" to your ten-year-old friend, and "Fairy Mary's Dream" to her who is five years older. They are published by Messrs. Groombridge & Sons, and are well illustrated.

ELSHAM SHOW (G. James).—Write to Mr. Waters, Secretary of the Elsham and Brigg Poultry Show, Elsham, Lincolnshire.

CAMBRIDGE POULTRY SHOW.—The Secretary has forwarded us the following corrections in the prize list:—Cochins, any other variety but Buffs.—First, H. Lloyd, jun., Handsworth; second, R. S. S. Woodgate, Pembury, Tonbridge Wells; third, S. Salter, Oxford.—"In your report you state that the prizes for Pouter hens were all given to Whites. This is incorrect, as my first-prize hen was a Blue; and although entered in the catalogue as over one year, her age in reality is only just six months.—W. R. ROSE, Cranley Hall, near Kettering."—Mr. Massey writes to say that the cup for Carriers was not taken by Mr. Cant. It was awarded to his (Mr. Massey's) Black Carrier cock—pen 344.—With great pleasure we hear from Mr. H. Gill that he has received his Golden-spangled Hamburg. The delay was caused by a railway accident and loss of the direction-label. He pays a well-merited tribute to Mr. Metcalfe, the Secretary, for the great care he took of the birds.

CRYSTAL PALACE POULTRY SHOW.—We had several letters relative to omissions and delays at this Exhibition. Most of the complaints arose from the impatience of the exhibitors, and some from circumstances over which the Secretaries had no control.

CORRECTING A JUDGE'S MISTAKE (*A Member of the Committee*).—"One of the Judges at our show made a most palpable mistake in awarding one of the prizes. The prize schedule states that 'the decision of the Judges will be final in all cases,' the prizes being paid on the last day of exhibition. Does such a clause preclude the Committee from deferring the payment of the prize till the Judge can be communicated with, he having gone home before the mistake was observed? There was no fraud on the part of the exhibitor." [If the mistake was as gross as giving a prize to a Carrier in mistake for a Pouter Pigeon, we think the Committee might withhold the prize; but if it was a mistake in awarding a prize to a bird of merit inferior to that of other birds of the same variety and class, we think the Committee ought not to withhold payment.—EDS.]

EXHIBITING PIGEONS (*J. W. E.*).—It is not customary, and you would have no chance of success.

VARIOUS (*Casari*).—It does not answer to hatch eggs in a greenhouse. If you try it, you will find they are always chilled when they leave it, and they do not grow well. Silkies will live in a very small space. They require no special care. We know no fence high enough to confine a Hamburgh; but if you wish an answer, we shall be justified in saying such a fence as would confine a Pheasant being full-winged. Your Fantails cannot be too small. Peak-headed, as the name implies, terminates in a point. Shell-crown has the appearance of a reversed scallop shell. The Rock Pigeons will come in if they wish it, but they are not to be enticed. Your experience is that of many others—that they are profitable to keep. Their home is their home, but they take their meals out. Buff Cochins are darker than Lemon.

FOWLS FIGHTING (*Perplexed*).—Have patience, and your birds will agree. There are generally faults on both sides when the two cocks fight, and even they get tired of barren laurels, and give it up. We advise you to adopt the system of the present day, and to "mistify" the combatants. If you have time, do it yourself; if you have not, entrust the performance to your "henchman." Recipe, Take an empty pillow-case, fasten it to the end of a beanstick. As soon as the cocks have sparred and are about to strike, buffet them both right and left with the empty pillow-case. Each, believing the attack to be from the other, gives up, believing either that he is betrayed or the victim of supernatural interference. They will look sly at each other, but will not fight afterwards.

EXHIBITING DORRINGS (*T. C. B.*).—If no age is specified you may make up a pen in any way you please. You may give your Dorrings what you like; during the damp bad weather bread and ale morning and evening. They do not want it in fine weather. Avoid linseed; it renders the birds fat and lazy, and makes their feathers soft. The Pigeon that confines itself most strictly to its own race is the Barb.

MARKING FOWLS (*I. H. B.*).—You must make no mark that is plain to the judges. We therefore advise you to perforate the web of the wing in any manner you please with a red-hot iron. It is indelible, and causes little or no pain. (*R. S. H.*).—Where you wish only to distinguish different broods, without reference to exhibition, we advise you to sew pieces of different coloured cloth round the legs of each brood.

KEEPING CHICKENS OF DIFFERENT BREEDS IN ONE HOUSE (*H. F. R.*).—So long as they agree, they will not fight. When they fall out, they will, but as a rule, they are not quarrelsome. A friend of ours some time since gave us a Kerry cow (we wish there had been two); another friend seeing her, said, "They are the most quarrelsome beasts in the world, and no fence will keep them in." We wrote to our good friend, and he said in answer, "Fill them with food, and they will neither be vicious nor run away." That will be true of your chickens: feed them well, and they will agree.

SHOWING BLACK BANTAMS (*Black Bantam*).—The bird has no chance of success if the white is visible.

POULTRY-KEEPING UNSUCCESSFUL (*C. H. J. P.*).—You have disease in your neighbourhood. Fowls prefer filthy water to any other, just as there are people who prefer to drink gin to any other beverage. Bad water is bad for fowls. In the space you mention there is sufficient room to rear chickens. The number of hens kept to one cock has nothing to do with the health of the birds. The cure of the complaint in its early stages is to give a stimulant, and the best is bread and strong ale. We should want more information before we can guess at the cause of the disorder. What is the nature of their roosting house? and, above all, what is the flooring? Are you still keeping old birds? Successful poultry-keeping implies a succession of young birds, and a strict attention to their wants, taking for your guide the state of a bird in its natural condition. The experience of fifty years has taught us that where these rules are observed there is neither failure nor sickness. We have no difficulty in making our fowls drink camphor julep. You must keep your fowls from access to any other water.

SHOWING GAME (*J. T. S.*).—An undubbed cock must be disqualified. In an open class for birds of all ages you may show chickens and adults together; in fact, you are supposed to make the best pen you can. You may give them a little stale bread soaked in wine or beer, a little chopped rump steak, and a few white peas. The first two induce high condition; the latter hardens the plumage.

ROVEN DRAKE LAME (*C. R.*).—Examine the foot; if the callosity be formed by a stone having perforated the skin, remove the cause and the disease will cease. If it is the effect of age and of carrying weight, put him in a place with soft straw, and he will get better, if not well.

POULTRY-FEEDING (*Amateur*).—Discontinue the potatoes, and feed the birds as long as they will run after their food; mix but a little at a time, and by observing the consumption closely, you will answer the question better than we can. You should keep them at 2½d. per head per week if they have a grass run.

DORKING COCK WOUNDED (*E. A. S.*).—Keep the bird away from other fowls who might peck the wounds. If undisturbed, nature will effect the cure unaided.

AYLESBURY DUCKS (*H. H. A.*).—Give him notice that unless he returns the money you will direct your attorney to proceed against him.

PLATES OF PIGEONS (*C. D. W.*).—They will be published collectively before long.

MANAGEMENT OF WAXBILLS (*Sunlight*).—From circumstances not under our control this answer has been delayed. Small Finches, such as Waxbills, die in fits when kept in confinement, caused by having too much over-heating food to live upon. When the common kinds of green food are not obtainable, sow in shallow saucers some grass seed, and when the herb is 2 inches high give it the birds; arrange so as to have a fresh one every week. The seed will grow quickly if kept in a warm and damp place with plenty of light. Many small Finches are fond of mealworms and plantain seed. Variety of

diet is required. Another cause of these pretty birds dying suddenly is draught. To prevent this and not hide the birds, fix a sheet of glass on three sides of the aviary, cover the top during the day, and all over at night, with any suitable fabric.

AUSTRALIAN GRASS PARAQUETS' NEST (*P. A.*).—When next your Grass Paraquets show signs of breeding, procure a cocoa nut with the outside fibre upon it, and with a small-toothed saw cut the fibre into halves, and take out the nut. Next make at the side or end a small hole about an inch in diameter; fasten the halves together, and fix it with wire in or outside of the cage near the top; but if outside, divide the wires so as to allow the birds to pass into the nest. Nearly all Paraquets in a wild state build in hollow trees. If your aviary is large enough, put into it a dry rotten limb of a tree, and the small pieces which the birds will gnaw off will form the nest, in which they will lay their eggs. Feed the birds with millet and Canary seed, and should they go to nest add some green food. Above all things let the birds remain as undisturbed as possible, and do not clean out the cage too often, as this often frightens them from the nest.

SILKWORMS (*Spero*).—We are not aware that silkworms have anywhere in England been reared and managed so as to be of commercial importance. It is not usual to raise the mulberry from seed. If you do so, the seed should be washed out of the ripe berries, preserved in dry sand, and sown in the following February.

BEES (*JOURNAL* (*G. H. M.*)).—We extract all that is now available for our climate. Its contents are not confined to bees. We do not know how to aid you.

METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		A.M.				IN THE DAY.					Rain.
1872. Dec.	Barom- eter at 39 feet Sea and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Tem- perature.		Radiation temperature			
		Dry.	Wet.			Max.	Min.	In sun.	On grass		
We. 4	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
Th. 5	29.737	32.3	36.8	N.	44.8	44.1	37.2	67.3	34.1	—	
Fri. 6	30.004	30.0	29.7	N.W.	42.1	48.5	27.2	59.2	22.2	0.245	
Sat. 7	29.500	43.2	41.8	S.W.	41.8	48.2	27.2	70.6	27.0	0.580	
Sun. 8	29.442	41.1	38.7	S.W.	42.8	45.8	37.9	63.2	33.5	0.040	
Mo. 9	29.561	39.4	37.2	S.W.	42.2	48.5	37.1	65.1	33.8	0.190	
Tu. 10	29.944	41.4	38.0	W.	42.6	48.1	38.4	67.9	36.3	—	
	29.109	37.9	36.4	W.	41.8	40.7	34.4	62.1	29.3	0.190	
Means	29.47	39.8	36.9		42.6	45.6	34.2	61.9	31.1	1.196	

REMARKS.

- 4th.—A very beautiful day throughout, bright, clear, and pleasant.
- 5th.—Sharp white frost in the morning; rather hazy in the afternoon, and rain in the evening.
- 6th.—Fine, dry, cold morning, cloudy at 3 P.M.; rain at 3.30 P.M., and slight rain the remainder of the day.
- 7th.—Very fine, though cold all the day; rain in the evening, but a fine night.
- 8th.—Fine morning, dull afternoon; rain began between 4 and 5 P.M., it fell at intervals all night, with very high wind; quite a gale all through the night, and till the middle of the 9th.
- 9th.—Fine morning; no wind in the afternoon; all the roads quite dry from the wind in the night.
- 10th.—Rather foggy in the morning, clearer after, and no wind, and very little sun; wind rose in the evening, and rain fell. Barometer fell rapidly, and at 6.55 P.M. was only 28.786 inches, corrected and reduced to sea level, being 0.068 inch lower than during the gale of Sunday.

Another week of low barometric pressure, and excessive rainfall. The total this year is already nearly 25 per cent above the average.—G. J. SIMONS.

COVENT GARDEN MARKET.—DECEMBER 11.

We have not anything fresh to report upon here; prices and supplies remaining much the same as they were last week.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	½ sieve	8 to 5 0	Mulberries.....	£1b.	0 10 0 0
Apricots.....	doz.	0 0 0 0	Nectarines.....	doz.	0 0 0 0
Cherries.....	per lb.	0 0 0 0	Oranges.....	£100	4 0 10 0
Chestnuts.....	bushel	12 0 20 0	Peaches.....	doz.	0 0 0 0
Currants.....	½ sieve	0 0 0 0	Pears, kitchen.....	doz.	1 0 3 0
Black.....	do.	0 0 0 0	dessert.....	doz.	2 0 4 0
Figs.....	doz.	0 0 0 0	Pine Apples.....	lb.	3 0 6 0
Filberts.....	lb.	1 0 1 6	Plums.....	½ sieve	0 0 0 0
Cobs.....	lb.	1 6 2 0	Quinces.....	doz.	1 0 3 0
Gooseberries.....	quart	0 0 0 0	Raspberries.....	lb.	0 0 0 6
Grapes, hothouse.....	lb.	2 0 5 0	Strawberries.....	£1b.	0 0 0 0
Lemons.....	£100	6 0 10 0	Walnuts.....	bushel	15 0 50 0
Melons.....	each	1 6 3 0	ditto.....	£100	2 0 2 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	doz	2 0 to 4 0	Mushrooms.....	pottle	1 0 to 3 0
Asparagus.....	£100	0 0 0 0	Mustard & Cress, punnet	0 2 0 0	
Beans, Kidney.....	£100	1 0 2 0	Onions.....	£ bushel	2 0 4 0
Broad.....	bushel	0 0 0 0	pickling.....	quart	0 6 0 0
Beet, Red.....	doz.	1 0 3 0	Parsley per doz. bunches	2 0 3 0	
Broccoli.....	bunch	0 9 2 0	Parsnips.....	doz.	0 0 0 0
Cabbage.....	doz.	1 0 1 6	Peas.....	quart	0 0 0 0
Capiscums.....	£100	2 0 3 0	Potatoes.....	bushel	3 6 6 0
Carrots.....	bunch	0 6 0 0	Kidney.....	do.	0 0 0 0
Califlower.....	doz.	2 0 4 0	Round.....	do.	0 0 0 0
Celery.....	bunch	1 6 2 0	Radishes.....	doz. bunches	1 0 1 0
Coleworts.....	doz. bunches	2 0 3 0	Rhubarb.....	bunch	0 0 0 0
Cucumbers.....	each	0 9 2 0	Salsafy.....	£ bundle	1 0 1 6
Cucumbers.....	doz.	0 0 0 0	Savoy.....	doz.	1 0 2 0
Endive.....	doz.	2 0 0 0	Scorzonera.....	£ bundle	1 0 1 6
Fennel.....	bunch	0 3 0 0	Sea-kale.....	basket	2 0 3 0
Garlic.....	lb.	0 6 0 0	Shallots.....	lb.	0 3 0 0
Herbs.....	bunch	0 3 0 0	Spinach.....	bushel	2 0 3 0
Horseradish.....	bunch	3 0 4 0	Tomatoes.....	doz.	1 0 2 0
Leeks.....	bunch	0 2 0 0	Turnips.....	bunch	0 3 0 0
Lettuce.....	doz.	0 9 1 0	Vegetable Marrows.....	doz.	0 0 0 0

WEEKLY CALENDAR.

Day of Month	Day of Week	DECEMBER 19—25, 1872.	Average Temperature near London.			Rain in 43 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m.	h.	m.	h.	Days.	m.	s.
19	TH	Meeting of Linnean Society, 3 P.M.	45.4	32.5	39.5	16	5	48	51	48	19	2	26
20	F		44.1	33.6	38.9	17	6	8	52	3	20	1	56
21	S	Shortest Day.	44.1	34.0	39.0	17	6	8	52	3	21	1	26
22	SUN	4 SUNDAY IN ADVENT.	45.0	32.5	38.7	21	6	8	53	3	22	0	56
23	M		44.1	31.7	37.9	21	7	8	53	3	23	0	26
24	TU		44.0	31.3	37.6	17	7	8	54	3	24	before	359
25	W	CHRISTMAS DAY.	43.4	29.4	36.4	9	7	8	55	3	25	0	34

From observations taken near London during forty-three years, the average day temperature of the week is 44.8°; and its night temperature 32.1°. The greatest heat was 58°, on the 25th, 1827; and the lowest cold 4°, on the 24th, 1860. The greatest fall of rain was 1.13 inch.

ELECTION OF ROSES.—No. 1.



THE time has arrived for the declaration of the poll, and I proceed to lay before your readers the results. In the first place, a word of apology is due from myself. Had I considered that the Strawberry election would have been completed so soon I should have left the matter in the able hands of Mr. Peach, but having undertaken it, I have tried to make it as complete as possible.

For all omissions and apparent lack of courtesy in not acknowledging letters, &c., I must also apologise; my little spare time has been thoroughly occupied. I trust that all who have helped me will accept my grateful acknowledgments now for their assistance. Some who assisted Mr. Peach last year were disposed to consider this election as antagonistic to his; this was far from my thoughts, and I was able to disabuse their minds. To Mr. Peach himself my thanks are eminently due, for he kindly placed at my disposal his last year's lists as a guide. Of those who replied to him, Mr. C. J. Perry, of Castle Bromwich, is the only absentee; the Rev. P. M. Smythe has passed away to a better country. Possibly I ought to apologise for the number of returns from Warminster. The fact is, most of us have a "soft place" in the matter of Roses, and we have for years kept a little amateur Rose Society going, and hold an annual exhibition. I may speak for those who have replied from this county, they know something about Roses—know what a good Rose should be, and can grow them, in spite of a rather bleak district and a not-too-kindly soil, and I think their opinions valuable.

I propose analysing the best fifty Roses first. Believing that it would greatly add to the interest of this election, I have kept it distinct as between nurserymen and amateurs.

Column A denotes the number of times a Rose has been placed in the first twelve by amateurs; column B the number of times in the next thirty-eight by amateurs; column C the total number of amateur votes for any Rose. The same letters with an asterisk attached show the voting for the same Rose by nurserymen. The remaining column denotes the combined votes of both parties.

The number in the first column before the name of the Rose denotes its position. When two or more Roses have the same number of votes, I have decided their position by the number of votes each has obtained in the first twelve. Where the votes are still equal the Roses are bracketed together, having one figure only before the bracket. With this explanation they tell their own tale.

Order.	Name of Rose.	A	B	C	A*	B*	C*	Total.
1	Charles Lefebvre	26	1	27	14	1	15	42
2	Maréchal Niel	24	2	26	13	2	15	41
3	Alfred Colomb	22	4	26	13	2	15	41
4	Madame Rothschild	23	3	26	12	3	15	41
5	John Hopper	16	11	27	4	10	14	41
6	La France	22	3	25	12	3	15	40

No. 612.—Vol. XXII., NEW SERIES.

Order.	Name of Rose.	A	B	C	A*	B*	C*	Total.
6	Marie Baumann	21	4	25	12	3	15	40
7	Comtesse d'Oxford	10	14	24	9	6	15	39
8	Marquise de Castellane	9	17	26	9	4	13	39
9	Sénéateur Vaisse	9	17	26	5	8	13	39
10	Pierre Notting	6	20	26	4	9	13	39
11	Duke of Edinburgh	6	17	23	8	7	15	38
12	Louis Van Houtte	6	18	24	4	9	13	37
13	Mlle. Eugénie Verdier	8	14	22	4	9	13	35
14	Madame Victor Verdier	8	13	21	4	10	14	35
15	Gloire de Dijon	11	10	21	8	5	13	34
16	Mlle. Marie Raby	4	18	22	2	10	12	34
17	Marguerite de St. Amand	4	17	21	1	12	13	34
18	Devoniensis	7	18	25	4	4	8	33
19	Edward Morren	6	14	20	1	12	13	33
20	Xavier Olibo	3	18	21	2	10	12	33
21	Dr. Andry	5	15	20	3	8	11	31
22	Victor Verdier	3	15	18	12	12	10	30
23	Exposition de Brie	2	15	17	10	10	10	27
24	Comtesse de Chabillant	4	13	17	2	7	9	26
25	Dupuy-Jamain	2	13	15	1	10	11	26
26	Abel Grand	1	16	17	1	8	9	26
27	Emilie Hausburg	11	8	14	5	5	10	24
28	Souvenir d'un Ami	7	12	19	2	3	5	24
29	Prince Camille de Rohan	3	13	16	1	7	8	24
30	Ferdinand de Lesseps	1	13	14	9	9	9	23
31	Madame Clémence Joigneaux	1	15	15	8	8	8	23
32	Souvenir de la Malmaison	3	11	14	2	6	8	22
33	Monsieur Noman	2	13	15	1	6	7	22
34	Jules Margottin	17	17	17	5	5	5	22
35	Paul Neron	12	12	12	1	8	9	21
36	Fisher Holmes	14	14	14	7	7	7	21
37	Princess Mary of Cambridge	16	16	16	5	5	5	21
38	Maurice Bernardin	1	12	13	1	6	7	20
39	Camille Bernardin	3	8	11	1	7	8	19
40	Beauty of Waltham	1	12	13	6	6	6	19
41	Mrs. Charles Wood	1	12	13	6	6	6	19
42	Duchesse de Caylus	2	11	13	5	5	5	18
43	Centifolia rosea	14	14	14	4	4	4	18
44	Lord Macaulay	1	12	13	4	4	4	17
45	Général Jacqueminot	1	10	11	6	6	6	17
46	Madame Vidot	10	10	10	7	7	7	16
47	Duc de Rohan	1	9	10	6	6	6	16
48	Horace Vernet	7	7	7	1	8	9	16
49	Elie Morel	10	10	10	1	4	5	15
50	Felix Genaro	7	7	7	1	7	8	15
51	Mlle. Annie Wood	10	10	10	1	4	5	15
52	Duc de Wellington	11	11	11	4	4	4	15
53	Antoine Ducher	9	9	9	6	6	6	14
54	Marquise de Mortemart	8	8	8	1	5	6	14
55	Céline Forestier	1	10	11	3	3	3	13
56	Souvenir d'Elise	2	8	10	2	1	3	13
57	Mlle. Thérèse Levet	6	6	6	1	6	7	13
58	Maréchal Vaillant	1	7	8	2	2	2	13
59	Madame Willermoz	11	11	11	7	7	7	12
60	Louise Peyronny	5	5	5	2	2	2	10
61	Hippolyte Flandrin	1	6	7	1	1	1	10
62	Triomphe de Rennes	1	8	9	1	2	2	10
63	Anna de Diesbach	1	7	8	6	6	6	10
64	Duchesse de Morny	4	4	4	6	6	6	10
65	Niphotos	5	5	5	4	4	4	10
66	Mlle. M. Dombrain	6	6	6	4	4	4	10
67	Mlle. Bonnaire	6	6	6	5	5	5	10
68	Madame Charles Craplet	5	5	5	2	2	2	9
69	Madame Rivers	1	6	7	3	3	3	9
70	Gloire de Vitry	6	6	6	3	3	3	9
71	Leopold I.	6	6	6	3	3	3	8
72	François Lacharme	4	4	4	3	3	3	8
73	Catherine Mermet	5	5	5	2	2	2	7
74	La Ville de St. Denis	5	5	5	2	2	2	7
75	Reine du Midi	4	4	4	3	3	3	7
76	Sophie Coquerel	4	4	4	3	3	3	7
77	Belle Lyonnaise	4	4	4	1	1	1	7
78	Madame Caillat	4	4	4	3	3	3	7
79	Clémence Raoux	4	4	4	1	1	1	6
80	Madame Boutin	4	4	4	2	2	2	6
81	Alba Rosa	3	3	3	3	3	3	6
82	Baronne Haussman	4	4	4	2	2	2	6
83	Boule de Nègre	4	4	4	2	2	2	6
84	Duchesse d'Orléans	4	4	4	2	2	2	6
85	Madame Fillion	3	3	3	3	3	3	6
86	Madame Alice Dureau	2	1	3	2	2	2	5
87	Perfection de Lyon	2	1	3				5

No. 1264.—Vol. XLVIII., OLD SERIES.

Order.	Name of Rose.	A	B	C	A'	B'	C'	Total.
60	Lyonnais	1		1		4	4	5
	Madame Bellon		1	1		4	4	5
	Lord Clyde		3	3		2	2	5
	Gloire de Santenay		3	3		2	2	5
	Caroline de Sansal		4	4		1	1	5
61	Baron Gonella		3	3		2	2	5
	Capitaine Lamure		2	2		3	3	5
	Miss Ingram		5	5				5
	Mons. Boucenne		4	4		1	1	5
	Nardy Frères		2	2		3	3	5
	Madame Margottin		4	4		1	1	5
62	President Thiers	1		1	3			4
	Baronne de Maynard	1	2	3		1	1	4
63	Madame Liabaud	1	1	2		2	2	4
	Madame Chirard	1	1	2		2	2	4
64	Etienne Levet					4	4	4
	Madame Lefebvre Bernard					4	4	4

Seventeen Roses received four votes; twenty-two received three votes, amongst these Prince de Portia and Princess Beatrice, these Roses having one vote out of the three, placing them in the first twelve; twenty-eight were named twice, André Durand and President Willermoz each receiving one first-class vote; seventy-eight were noticed only once, amongst them Vicomtesse de Vezins, &c.

Vicomtesse de Vezins and Madame "Augusta" Verdier were named once only, in each case as amongst the best twelve. The latter, mentioned by an anonymous correspondent from Bury St. Edmunds, and described by him as "a grand Rose, keeps its colour so well," I cannot find in any catalogue; as both Madame Victor and Mdlle. Eugénie Verdier are also mentioned in the same fifty, I cannot suggest any explanation of the error, if error it be. This correspondent has to more than half of his selected fifty attached reasons for the faith that is in him, so that it is hardly a haphazard selection.

This point leads me to mention another circumstance—viz., the names of Roses. Mr. G. F. Barrell writes, "Can nothing be done to impress on raisers the desirability of improving the present absurd mode of nomenclature? Why should we have some nine or ten Roses named after various members of the 'Verdier' family, five or six 'Woods,' &c., rendering confusion worse confounded? let alone the fact that not unfrequently we have one brought out of identically the same name as a predecessor some years before." This is, indeed, a crying evil, and is a fertile source of error. I notice, too, that the catalogues also differ in the names they give to the same Rose.

A few words on the table of the fifty Roses. I received in all twenty-seven replies from amateurs or their gardeners, and sixteen from nurserymen. Of the latter, one received from Mr. Kirk Allen, the Nurseries, Brampton, Huntingdon, on the 2nd of December, I was forced to set aside, not because it was late, for I received three other lists at the same time, but because more than fifty Roses were named, and there was no time left for alterations; this I regret. This leaves forty-two electors, in the proportion nearly of two to one as regards amateurs and nurserymen; and as the voting is kept separately, and the provision for a scrutiny of the ballot is perfect and open to all, by the addition of the full lists, it is open to "SÉNATEUR VAISSE" and others to make their own conclusions.

By these forty-two electors no less than 249 Roses have been named more or less frequently in the fifty; one alone has been named by everyone, and that honour belongs to our tried friend and truly grand Rose Charles Lefebvre; he is, however, closely pressed by several. John Hopper is named by every amateur in the fifty; whilst Maréchal Niel, Alfred Colomb, Madame Rothschild, La France, Marie Baumann, Comtesse d'Oxford, and Duke of Edinburgh are named by all the nurserymen. Comtesse d'Oxford, Marquise de Castellane, for Roses of 1870, have come well to the front, and, I think, richly deserve their honours. The latter would not have fared so well but for the Wiltshire votes; amongst us it is a great favourite, and those who had the pleasure of seeing thirty-six blooms of this Rose exhibited by Mr. H. Bennett, of Stapleford Nurseries, at the Frome Rose Show this year, are not likely soon to forget it. Louis Van Houtte and Mdlle. Eugénie Verdier also stand well; the former would be the better for a little more stuff in it, but both are splendidly-coloured flowers. Whether Emilie Hausburg is as forward as Mr. Peach expected it to be I cannot say; but though standing 26 in order of merit, no less than sixteen out of the twenty-four votes received place it in the best twelve. To my mind it is a most lovely Rose; but—ah! there it comes—but, does it like a hard

winter? I fear not. Some few Roses we amateurs do not value at the same rate as our brethren in the trade, notably Horace Vernet, Louise Peyronny, and Madame Vidot; the latter I have seen grown magnificently by nurserymen, but I must confess my utter inability to grow it much larger than a beautiful diminutive Ranunculus.

In regard to the BEST TWELVE out of the fifty, sixty-eight Roses have been named. A reference to the table will show that, though John Hopper stands No. 4 in the general total, amongst the twelve he would have to go down several steps. I may draw attention here to the fact that President Thiers, one of the new Roses, has been named four times only, but in every instance amongst the best twelve—viz., by an anonymous correspondent at Ripon, and by those good rosarians, Messrs. Paul & Sons, of Cheshunt, Mr. J. Cranston, of Hereford, and Mr. John Durbin, of Englishcombe, near Bath, so that we may calculate that this Rose will be an acquisition. Madame Bellon, Belle Lyonnaise, Etienne Levet, and Madame Lefebvre Bernard also received fair support from the nurserymen; Mr. R. B. Cant, of Colchester, adding, "I should have liked to have included amongst the fifty-three, new ones which I have a high opinion of, but think it better to wait another year. Madame Bellon and Etienne Levet I feel certain ought to be amongst the best fifty, and may, probably, even get a further advance another year. The three new ones are Souvenir de Paul Néron, T., Baron de Prailly, and Madame Lefebvre Bernard, H.P." This Tea Rose is named by that veteran rosarian, Mr. J. Keynes, amongst his twelve best Teas, and in his fifty.

In the election of best TEA ROSES, &c., the same division has been adopted; there are, however, some differences. Mr. Kirk Allen's list of Teas is added, and Mr. Proctor considers his locality unsuitable, and sent no list: the number of nurserymen's lists is, therefore, the same. In the amateurs' there is one less—viz., twenty-six, or forty-one voters in all. The poll is as follows:—

Order.	Name of Rose.	Votes. Amateurs.	Votes. Nurserymen.	Total.
1	Devoniensis	25	15	40
2	Maréchal Niel	25	14	39
3	Gloire de Dijon	24	12	36
4	Souvenir d'un Ami	22	13	35
5	Souvenir d'Elise	20	8	28
6	Madame Willermoz	16	9	25
7	Triomphe de Rennes	16	8	24
	Niphetos	11	13	24
8	Celine Forestier	15	6	21
	Madame Margottin	15	6	21
9	Belle Lyonnaise	10	8	18
	Adam	9	5	14
10	Madame Falcot	7	7	14
	Catherine Mermet	8	5	13
11	Alba Rosea	5	8	13
12	Rubens	5	6	11
13	Cloth of Gold	7	3	10
14	Lamarque	6	3	9
15	Madame Bravy	6	2	8
16	President	2	5	7
17	Madame Levet	4	2	6
18	Solfaterra	4	1	5

Marie Sisley, Safrano, and Madame de St. Joseph each received four votes, seven received three votes, fifteen received two votes, and the remainder one vote each. Of the newer Tea Roses, Madame Marie Van Houtte, Souvenir de Paul Néron, and Mdlle. Cécile Berthod received two votes each, the two latter receiving a vote from Mr. Keynes; indeed, he places the last of the three in his best fifty Roses. Mr. Durbin also places this Rose amongst the best Teas. Coupling this with Mr. Cant's remark, we may hope that amongst these three there will be a useful addition to our list of Teas. Mr. George Prince also votes for Souvenir de Paul Néron. Of the Teas, as amongst the general list, we amateurs seem to undervalue certain Roses—viz., Niphetos, Alba Rosea, President, and Rubens, whilst Belle Lyonnaise has nearly as many votes from the nurserymen as from us.

I come now to the voting on the last point, the selection of the BEST ROSE FOR ALL PURPOSES. My own belief was, that the voting on this question would have been almost unanimous in favour of Gloire de Dijon. Great was my surprise in noting that the first nine or ten returns gave him only three votes. However, the later returns have placed that useful old Rose well at the head.

In replying to this question some appear to have found difficulty. Mr. Baker says he cannot, there being "many Roses which are equal favourites of mine;" whilst one of our oldest

and most respected Rose-growers—may his shadow never be less—replied first, “The Rose best suited for the purpose required.” Pressed by me kindly to name one, he did so, but added, as if to express a greater admiration for one rather than another of his favourites had given him quite a pang, “How is it possible to answer the question?” Another reply was more after my own heart—“I have given my vote for that dear, useful old snob, Gloire de Dijon, as a republican president, sadly against my will, for one rarely sees him in an exhibition stand; but as blossoming early and late in every situation, clime, and soil, in peer and peasant garden, he is unequalled for usefulness and excellence.” An old proverb says, “Nine times out of ten the women can do as well as the men.” Mrs. H. looking over my shoulder remarks, if I cannot say more for the softer sex than that, I had better say nothing! Thus admonished, in fear and trepidation I venture the remark, *that the tenth time they do better*. Some of us men folks have been stumbling over the difficulties of this question: let me show how the Gordian knot has been untied by a fair sister rosarian in the Emerald Isle. I print the whole, and trust the “mystifiers” do not include me! “AN AMATEUR, *South of Ireland*,’ would vote Gloire de Dijon the Rose best suited for all purposes. Sixteen perfect and most beautiful blooms she cut from a plant on a south wall the first week in May, and has taken from a standard without any protection a perfect flower on Christmas-day. Have we in cultivation one other Rose that the same could be said of? Being the first who elicited all the very valuable information we last year received regarding the Rose, the present discussion is anticipated with great anxiety and interest; but being too modest a Rose-grower, would not attempt entering a list for the fifty.” Mr. Peach, I like to see that fruit well coloured and certainly this ought to put the bloom on it, “writes what one can comprehend! Some others only mystify matters.” Of course this vote was retained. I may add my testimony. Years ago I made a note in “our Journal” and remarked that on that New Year’s-day I had cut several well-formed half-open buds of that valuable Rose from a north wall. Take him for all in all, probably no single Rose gives as much general pleasure, and I am glad that, tried by Mr. Beachey’s system of points, he comes out in the position he occupies here.

It may interest some of our readers to know how the electors voted on this question; I shall therefore publish the names and votes. Eight Roses in all were named for this honourable position. There were forty-three voters, and Gloire de Dijon obtained the votes of the “lady of the Emerald Isle,” the Revs. S. Reynolds Hole, C. P. Peach, Denis Knox, E. Pochin, C. Bulmer, and H. H. Dombrain; Capt. Webb, Messrs. Parsons, Grubb, Mount, Nichol, Beachey, “MODEST ROSE-GROWER, Ripon,” and Hinton; and the following nurserymen—viz., Messrs. J. Cranston, John Durbin, C. Turner, H. May, R. B. Cant, Paul & Sons, and R. Smith—fifteen amateurs and seven nurserymen, twenty-two in all. *Maréchal Niel*, amateur votes, Revs. J. Camm, R. N. Milford, E. Lascelles, and E. Handley; and Messrs. Scott, Smith, Stratton, J. Marsh, jun.; Messrs. Prince and W. Paul alone supporting him amongst the trade—in all ten votes. *Charles Lefebvre* was named by the Rev. W. F. Radclyffe, the anonymous Rose-grower from Bury St. Edmunds, Messrs. Barrell and Tapner, and by Mr. H. Bennett—five votes. *Alfred Colomb* was supported by Messrs. J. Keynes and G. Cooling—two votes; and the remaining four Roses—*Marie Baumann*, *La France*, *John Hopper*, and *Marquise de Castellane* were respectively named by Messrs. Wheeler, Kirk Allen, Procter, and T. Lister.

And now I bring my self-imposed task to an end. It has been a labour of love, still somewhat a labour; but if it tends to bring out more clearly the best Roses (and we may fairly say that those that have received half the possible number of votes ought to be in every collection), if it assists in spreading the love for our national flower, I shall be very gratified. I venture to express the opinion that the extension to fifty Roses is an error. No less than 145 Roses have only been named four times and under, whilst seventy-eight only received one single vote! After wading through all these returns several times, I arrive at this conclusion, that naming the best twelve Roses, and adding to these the twenty-four next best would be quite sufficient, especially if at the same time there is an election of Teas and Noisettes. It will also certainly be desirable to hold the election earlier in future. I again gratefully return my thanks to all who have contributed to make the return as complete as it is. I trust it may become in some shape an annual affair, and I believe such an

election would prove very useful. I will simply add, that my own list was drawn up before any others were received.—JOSEPH HINTON, *Warminster*.

[In our next number we shall publish how each voter voted, there being no Act of Parliament to the contrary in the Rose kingdom.—EDS.]

PROPAGATING THE CALCEOLARIA.

I AM induced to say a few words on this subject, as there are some who think Calceolarias are difficult to manage, will not stand frost, and must be taken great care of during the winter. I have sometimes visited places where I have seen them put in pans and boxes, and coddled-up in houses during the winter, and still they looked pitiable objects; in spring, when potted-off, there might be one-half of them alive, sometimes not that.

The method I adopt is very simple. I dispense with pans, boxes, and pots, and I use frames, which are placed at the back of a north wall, or of a hedge facing the north (I am particular about the aspect). In these I place a mixture of loam and leaf soil to the depth of 6 or 7 inches, then a sprinkling of sand on the top. The bed having been made smooth with the back of the spade, it is ready for the cuttings, which are taken off at the end of October or beginning of November, selecting strong short-jointed shoots that have not bloomed, and which the plants generally produce in abundance at that season. A board the width of a light is used to stand on. Everything is now ready for inserting the cuttings 2½ inches apart. When the frame is filled I give a good watering. I allow the cuttings to dry a little, and the lights are put on. If the frames are in the aspect I have mentioned, as being the preferable one, it will not be necessary to look at the cuttings again until spring, when it will be found that ninety-nine out of a hundred are alive. I have years since proved that even the protection of hand-lights at the back of a north wall is sufficient.

In spring, when the cuttings begin to grow, I pinch-out the top of each, and give air on all favourable occasions, and when the young plants show signs of overcrowding I have a place prepared for them in some sheltered position, where a little protection can be afforded in severe weather. They are then carefully lifted with a trowel, planted out 6 inches apart, and well watered to settle the soil. Thus treated they will be nice bushy plants set full of bloom by planting-out time, when they can be lifted with large balls of soil, and transferred to the beds or borders ready to bloom at once. They will be far ahead of those plants that have been stunted and crippled in small pots, and which will only be putting on their best dress when the season is half spent. It is not too late even now to put in the cuttings; anyone who has a frame or hand-light may secure plenty of plants for next year. At this season I have sometimes lifted a few old plants and potted them; they flower early in the spring in the greenhouse, and when their flowering is over I have had all the old blooms picked-off, turned the plants out in any of the mixed borders, and have had plants 2 feet through full of bloom.

I may also mention that *Gazania splendens* can also be propagated in the same manner.—J. ANDERSON, *Hill Grove, Kidderminster*.

HARDINESS OF OSMANTHUS ILICIFOLIUS.

THIS Holly-like evergreen shrub, introduced a few years ago from Japan, promises to become an ornament to our lawns and shrubberies, for with us it has survived the last four winters out of doors without the least protection. It is in a very exposed position, open to the north and north-east winds, yet I have never seen a leaf discoloured with the cold, and this year it is in a great measure covered with flowers, which I fear are too late for seeds to follow. It is, however, very interesting to see shrubs in flower in December, and, as I mentioned in a former article, the present year has been an exceptional one in this respect, for there are several flowering now, and amongst them *Osmanthus ilicifolius* is not the least important. In habit it strongly resembles some of the Hollies, the leaf being, like them, armed with prickles, and the general character of growth much the same, but perhaps less robust. Our specimen is planted on ground of a highly calcareous character, and the very reverse of that in which the Rhododendron and similar plants delight. It might, perhaps, grow more freely in a soil more congenial to it, but even as it is it is a shrub deserving attention, and forms a useful addition to our lists of evergreen shrubs. Being one which we may call

perfectly hardy, it is all the more valuable.—J. ROBSON, *Linton Park Gardens, Maidstone.*

JOTTINGS ON THIS YEAR'S GARDENING.—No. 6.

A wet season, as we all know, is not favourable for a display of flowers. Foliage on the whole has been more satisfactory. Coloured-leaved plants are in my opinion quite as pleasing as flowering subjects, and in a wet season more effective; besides, as the amount of colour depends on the number of leaves, they can be pinched into any required height and breadth; but we cannot practise this to anything approaching the same extent with flowering plants. Stop these, and you prevent the flowering for a considerable time.

Of white-foliaged plants probably there is none that can compare with *Centaurea ragusina* (candidissima). This season it has grown unusually strong, but at the same time has been very good in colour. Small plants at planting-out time became strong by July, and have been taken up quite large with numbers of side shoots. I have given up propagating these plants at any time except in spring. The plants are taken up early in October, the large leaves removed, but not stripped off very closely, potted in loam with a little leaf soil and sand, using pots just large enough to hold the roots, and placed on shelves in a house with a temperature of 45°. Water is given but sparingly—never until the soil becomes dry; then a good supply is afforded, and no more is given until the soil becomes quite dry again, it being less prejudicial for the plant to flag than for the leaves to be very fresh and the soil very wet. In a short time, with the leaves very fresh but the soil wet, a reaction will set in, and the leaves will fall, the plants dying upwards and dropping off at the collar. In March they will have fine side shoots; these are slipped off, or rather bent downwards, and with a knife severed from the plant with a clean cut upwards. We have only to remove the leaves to the extent of about an inch, and insert the shoots singly in 3-inch pots up to the leaves, making a hole in the centre of each pot, dropping in some silver sand, and, letting the base of the cutting rest on that, fill round the cutting with sand, making all quite firm. If the cuttings are sufficiently long to have an inch of stem, or so that they can be inserted in the soil to that extent and have the centre clear of the soil, it is enough. They will root freely in a gentle hotbed of 70° to 75°, or in a vinery with a night temperature of 60° to 65°. Keep them just moist, and shade them from bright sun. In three weeks they will be rooted, and should be removed to a lower temperature; and by shifting into 4½-inch pots, and keeping them in a temperature of about 50° at night, they will be fine plants by May, only needing hardening-off in a cold pit or frame. They like plenty of light and air. All the *Centaureas* may be propagated in the same way.

Centaurea babylonica, a tall-growing kind with finely-cut rather long leaves, I do not think so highly of, though it is very graceful and silvery, yet not nearly so white as *C. ragusina*; but the foliage is not sufficiently dense to have any great effect. Unless its beauty is greater elsewhere it may well be dispensed with. *C. Clementei*, on the other hand, is a free-growing kind, producing from a crown leaves of considerable length and gracefully arching over, the leaves deeply fringed and lobed, and the lobes again fringed and subdivided. The graceful and elegant foliage is in its early stages so densely covered with down as to be perfectly white, and when fully developed has a fine silvery aspect. Plants from seed the first year are not much as to colour; they are, as with *Cineraria maritima* and other white-leaved plants raised from seed, deficient in that bright white or silvery appearance we have in older plants. This *Centaurea* will become as great a favourite as *C. ragusina*; it is of much larger proportions, and as such will be fine for large masses, and as single specimens in beds or even on lawns.

Cineraria maritima has been very fine this year. The longer I grow it the more I like it. It is one of those plants which never disappoint. Plants from cuttings are, however, the only ones to be depended on. Seedlings are not silvery enough the first year, and they are far too rank in growth. At the risk of being considered as giving a great deal of trouble where none is needed, I may say that I take up a number of plants in November, choosing the smallest and those having the most down on the young leaves, pot them in light sandy soil with a little leaf mould, place them in a house, and winter them in the same way as the *Centaureas*—not that the plant is tender here,

for it stands out in shrubby borders and attains even noble proportions, having a fine effect with the green of the shrubs, but because out of doors it does not produce shoots from near the root early enough for spring propagation. The old shoots are bent down, even if they break at 2 or 3 inches from the soil, about the middle of January, and a great many shoots rise from the base of each. When they are about 3 or 4 inches long they are cut off close to the point whence they proceed, and are treated the same as the *Centaureas*; only, being much smaller, they are put in about an inch apart in pans, and when rooted are potted-off. If put in as late as April they are good for planting-out, being left in the cutting-pans or boxes until planting time.

With *Centaurea*, *Cineraria*, and the indispensable *Cerastium*, I care for none of the other white-leaved plants. Taste differs, it is well that it should; but what is the use of multiplying varieties of plants that give us nothing new, different, or better than what we have already in older subjects?

Iresine Herbstii has done uncommonly well, keeping very close to the ground, and being of very dense habit. I have never seen it finer than it was this season. It is not only of a very different colour—brownish crimson, with lighter-coloured veins—from *I. Lindeni*, but of different habit. The latter is stiff and erect with very much longer, pointed leaves; the colour deep dark red, approaching black, the veins lighter-coloured. It is not nearly so bold in foliage as *I. Herbstii*, but has a more telling appearance. *I. Lindeni* is very much the hardier. *I. Herbstii* was cut off by frost at the end of September, whilst *I. Lindeni* was uninjured. Both strike very freely from cuttings which I put in during September in a gentle hotbed, keep in pans until about February in a temperature of about 50°, and then pot-off.

Pyrethrum Golden Feather has disappointed me, as it invariably does when the plants employed are from cuttings. To have it with fine foliage and few flowers it should be sown in heat in February, pricked-out about an inch apart in pans or boxes when large enough, and grown on, planting out after hardening-off in May. From cuttings it grows indifferently, and exhibits far too many of its starry white flowers.

The only other self-coloured-leaved plant that I have this season is *Perilla nankinensis*, which in a good rich soil always does well. Dell's *Crimson Beet* in the kitchen garden was very good in colour and outline.

Abutilon Thompsoni with its golden-blotched leaves is fine for the centre of a bed, and has done well this season. It is seen to the best advantage when stiff plants about a foot high are employed.

Alternantheras grew less and less every day after being put out, and were a failure.

Mrs. Pollock *Tricolor Pelargonium* was not nearly so good in colour or growth as *Lady Cullum*, which in my opinion is one of the best. *Golden Fleece*, *Cloth of Gold*, and *Golden Chain* grow less after being planted out. The only one of the gold-variegated sorts that does any good is *Crystal Palace Gem*. *Bijou* does here better than any of the silver-variegated kinds. *Bright Star* is, however, good, and of fine habit. *Prince Silverwings* is very beautiful, and evidently stands wet well.

Of the flowering *Zonal Pelargoniums* none has this year surpassed the very old, and what many consider obsolete, *Tom Thumb*, which as to habit is the model of what a bedding *Pelargonium* ought to be, being dwarf, and having as great a disposition to grow sideways as many kinds of the day have to grow upwards, and make long shoots without the branching habit or side growth of *Tom Thumb*. It has also a not very large, but smooth bright green leaf without admixture, whereas many of the "lions" have a rough hairy leaf, of anything but a bright green colour, and are not improved by the dark zone, conspicuous at a near view, but, at the distance at which bedding plants are mostly seen, lost in the general foliage or leaf-colouring of the plants. *Tom Thumb's* trusses of bloom being very much less than in the newer kinds is an advantage rather than otherwise, for as a rule the large trussers produce them far apart, whilst the smaller trussers are thrown up abundantly. They afford the colour we wish more evenly disposed—in fact, give us the colour we want in their self-coloured setting, whilst the large-trussed kinds afford colour disposed often irregularly over the mass. Then a small truss is not so liable to suffer from continued wet as a large truss, the dead remains of the first flowers turning mouldy, and the whole truss having a dead appearance. *Tom Thumb* has one other good property—it rarely seeds, even in a hot and dry season; but how few of the others do not? I mention these things in proof of our still

needing improvement in the habit and floriferous character of bedding Pelargoniums. Those that are of Tom Thumb habit are Little Excellent, cerise scarlet, with a very slight purple tint; Bayard, deep crimson; Cramoie Supérieure, crimson, with orange shade; and Crimson Perfection, velvety crimson; Waltham Seedling has long shoots not sufficiently branched, with very large trusses of dark crimson; it is, however, a very fine bedder; Middle Nilsson, lilac rose, white centre, and large trusses, habit almost erect; Queen of Nosegays, large trusses, bright crimson, compact growth, fine; Murillo, blood crimson, a great bloomer, and dwarf habit, good; Vesta, crimson scarlet, of free growth, extra; Mrs. Upton, pink, undoubtedly the best pink bedder. Jean Sisley and Vesuvius may justly claim to be the best of the bright scarlets. In whites The Bride is superior to Madame Vaucher; Little David still holds its own as a dwarf scarlet; also Cybister, scarlet crimson, and Indian Yellow, orange scarlet. Alexandra, crimson and magenta, and Amy Hogg, purplish rose, are not amiss; and what fine subjects both Blazer and Soleil would be if they grew less strong and upright! Blazer is the very finest of the bright scarlets. Soleil is orange scarlet. The double-flowered sorts, what fine foliage they had this year, and how few their flowers! A fine, hot, and dry season is needed for these; in a wet year they are of no use.

Calceolarias have been good. They started very badly after planting, but the wet brought them on well, and they were good until late. I have an idea that these plants are quite hardy, if the cuttings be put in in a sheltered border.

Imperial Dwarf Ageratum has shown great diversity in the height of the plants, the habit, too, being very different. It is more dwarf and floriferous from cuttings than from seeds; the latter, however, make the best plants: select only those that have a stiff and dense broad leaf-habit, rejecting those having long joints with leaves far apart.

Gazania splendens has grown exceedingly well, and notwithstanding the wet, has been fine; it is now (November 20th) full of flower. Its neat habit renders it very desirable in many arrangements.

Tropæolum compactum luteum gave a mass of bright green foliage, and numerous yellow flowers well elevated above the foliage, which last is very much too abundant. It is, however, much superior to the Tom Thumb type.

Lobelias have done extra well; there was no want of vigour in the plants from cuttings, and they bloom much more profusely, have larger flowers, and produce these earlier than seedling plants.

How fond rabbits and hares are of Roses! We planted some last spring in masses, and no sooner had they made shoots a few inches long than they were eaten close to the old wood. In consequence of this the groups had to be wired round. Notwithstanding these pests the Roses have grown fairly, and the following are good here:—Countess of Oxford, Baroness Rothschild, La France, John Hopper, Edward Morren very fine, Alfred Colomb, Charles Lefebvre, Comtesse de Charbrilliant, Sénateur Vaisse, Thyra Hammerick, Xavier Olibo, Princess Christian, Maurice Bernardin, Marie Baumann, Marguerite de St. Amand, Charles Rouillard, Duke of Edinburgh, and Gloire de Dijon. There has been no mildew or fungus. The ground is well and deeply trenched—it is a good stiff loam—and heavily manured.

Alluding to hares and rabbits reminds me that they eat the Lobelia to the ground. They seem fonder of this plant than any other I know. It would be a good subject to plant for those wanting to attract those animals to a particular spot. Spiræas they eat completely down in summer, and Skimmia japonica they cut off to the ground. They have been keener of "tasting and trying" this summer than I have known them in a mild winter.

The wet season has been very favourable for newly-planted trees and shrubs.—G. ABBEY.

P.S.—It may not be generally known that Ficus repens is quite hardy. It escaped from a fernery through a chink, and became attached to the wall outside, which has a north aspect. It has a much finer appearance out of doors than in-doors, and will no doubt prove useful for covering walls and rock-work.—G. A.

STORING STRAWBERRIES.—I have for many years past used light soil or sometimes some coal ashes, &c., but they are all objectionable in wet winters, generally part or all giving way. I this year have tried sawdust, which answers admirably if care is taken not to have too great a bulk together; mine is

3 feet at bottom, going up to a point. If there is too great a bulk the dust heats.—R. GILBERT.

ROYAL CALEDONIAN HORTICULTURAL SOCIETY'S EXHIBITION.

THE last Exhibition for the season of flowers, fruits, and vegetables in connection with the above Society, was held in the Music Hall, George Street, Edinburgh, on the 11th inst., when excellent collections of fruit, numerous interesting groups of plants, and large quantities of vegetables, &c., were staged for competition.

Exotic fine-foliaged plants were not so plentiful as might have been expected from the fine collections of these plants that exist in the vicinity of Edinburgh. This deficiency we cannot be surprised at, as the Show took place on a day when sharp frost, cold winds, and occasional snow showers were the trying elements to which exhibitors would have had to expose their gems. Constitutional infirmities which ultimately follow such exposures are of a character that even the certainty of obtaining the "red caird," is not adequate to recompense for the risk.

For three Orchids in flower, Mr. Currie, of Salisbury Green, was first. One plant of *Lælia anceps* in his collection was a magnificent specimen, bearing fifteen strong spikes, each producing four or five blooms.

Mr. Fraser, Cannonmills Lodge, gained an easy first prize in the class of six Ferns of six sorts, with *Asplenium fragrans*, *Goniophlebium subauriculatum*, *Adiantum farleyense*, *A. cuneatum*, *Pteris umbrosa*, and *Todea superba*; the last by no means so fine as one of the same in the second-prize group shown by Mr. Paul, a keen amateur residing at 89, Gilmore Place, who was also first for the finest *Epiphyllums* in the Hall. The second-prize lot from Mr. Gordon, Niddrie House, and numerous others were very poor indeed.

Mr. Currie had *Areca Verschaffelti* and *Astrocaryum mexicanum* very fine in his first-prize group of four fine-foliaged plants. Mr. Gordon took the second. Mr. Murray, gardener to Mrs. Brown, Carlton Lodge, Murrayfield, and Mr. Currie had awards for three greenhouse plants, in the order named. In the ornamental-berried class of plants, Mr. Currie was first, and Mr. Gordon second, with nicely-furnished plants of the *Solanum* tribe. *Dracæna regina*, *D. Guilfoylei*, *D. terminalis*, and *D. Cooperii* were the finest amongst Mr. Currie's first-prize lot of six.

Mr. W. Shaw, Donislan House, Newington, was first for three pink and three white *Primulas*. The plants and strain were only second-rate, though, better than many staged against them. *Cyclamens* were well shown by Mr. Currie, who got first; Mr. Allan, Ratho Park, Ratho, taking second, both having good strains in form and colour of flower. Mr. Anderson, gardener to the Earl of Stair, Oxenford Castle, was first for Zonal Geraniums *Le Prophète*, *Jules César*, and *Excellent*, showing fine colour and compact trusses for winter blooming.

Chrysanthemums were poorly shown in all classes. With twelve blooms of the large varieties, Mr. Clark, gardener to W. T. Mitchell, Esq., Parson's Green, was first with some well-formed flowers of *Lady H. St. Clair*, *Jardin des Plantes*, *Jenny Lind*, and *La Belle Blonde*. In the nurserymen's class, Messrs. Downie, Laird, & Laing were first for plants, and also for blooms of *Chrysanthemums*, Messrs. Methven & Sons taking leading honours in the Pompon section.

Messrs. Gordon & Sons, nurserymen, Coltbridge, came first for *Cyclamens*, with some especial good whites. The latter firm had first for *Camellia* plants in bloom, and cut blooms also; *Lady Hume's Blush*, *Alba plena*, and *Emilia Campione* being particularly fine.

Amongst exhibits, Messrs. Peter Lawson & Sons occupied their usual creditable position, in having the orchestra tastefully embellished with the choicest examples of rare *Coniferæ*, for which their nurseries are celebrated; Palms of the choicest description, tree Ferns of noble proportions, *Dracenas*, *Epiphyllums*, &c. The same firm also exhibited a collection of roots wonderful in size; the Mangold Wurtzels and White Carrots being enormous products. A number of bulbs of *Kohl Rabi* amongst them were of great interest. Messrs. Downie, Laird, & Laing had a choice display, which filled two tables, and consisted of *Yuccas*, *Palms*, *Heaths*, *Crotons*, *Ferns*, and many other fine stove and greenhouse subjects. Messrs. Methven & Sons, Leith Walk, exhibited a large, varied, and effective collection of *Pandanuses*, fine *Crotons*, *Chrysanthemums*, *Marantas*, *Cypripediums*, &c. Messrs. Gordon & Sons, and Dickson Brothers sent collections which were of the most select and meritorious character. A small collection of grotesque *Mammillaria* and other Cacti, shown by Mr. Adamson, 14, Couper Street, Leith, was of great interest, and bore signs of being properly cared for. Mr. Clark, Parson's Green, exhibited a collection of beautiful variegated-leaved *Beetroot*, which if a little taller would be of great service for fine-foliaged bedding.

Bouquets were elegantly done up, and plentiful; the most

graceful in the room belonged to Messrs. Methven & Sons, and took the first prize as a hand bouquet, its composition of small Camellias, Bouvardias, Fern fronds, &c., being exceedingly pretty. Messrs. Gordon & Sons' table bouquet was very attractive, having an edge of *Thuja gracilis*, showing what may be done with such where Fern fronds are scarce. Other prize bouquets were artistically got up by Mr. J. Paterson, Mansfield Lodge, and Mr. N. Fraser.

Fruit was shown in very excellent condition. The Rev. W. B. Bushby, the Vicarage, Dalkeith, came first for two bunches of Muscat of Alexandria, which for superb finish in every respect were the finest Muscats shown in Scotland this season, small compact bunches, berries plump, and highly coloured. Mr. Stewart, The Glen, was second with two good bunches, but not so well finished as the first. With the collection of four sorts of Grapes, Mr. W. Shaw was first with one fine large bunch of Barbarossa, Muscat of Alexandria, Black Alicante, and Gros Colman. Mr. Hannah, Burnhead, was second with excellent Lady Downe's, Alicante, Mrs. Pince, and Black Hamburg, the latter showing a weakness in his otherwise first-rate collection. Mr. Greig, Craigend Park, Mr. Brunton, Drem; and Mr. McIntosh, Luss, Dumbarton, competed in this class, the latter having one of his bunches named "White Hamburg," bearing a striking resemblance to Raisin de Calabre. For two bunches of black Lady Downe's, Mr. McIntosh Leslie was first with finely formed beautifully coloured bunches, Mr. Hannah being second. For the White and equally valuable kind of this variety, Mr. Greig had an award for two small but nicely-finished bunches. Mr. Hannah was first for Black Alicantes, and Mr. Shaw second, both having well-coloured examples. Mr. Hannah showed Mrs. Pince in fine condition. For any sort, Black, not named above, Mr. Leyden, Whitehill, was first with West's St. Peter's. For two bunches of any sort, White, Mr. Brunton was first with Bowood Muscat, Mr. Greig second with Chasselas Napoleon. For the finest-flavoured Black, Mr. Summers, Polton House, was first with Black Hamburg. For the finest-flavoured White, Mr. Stewart was first with Muscat of Alexandria. Gros Colman was competed for by Mr. W. Shaw, who obtained the first prize with two very imperfectly-coloured bunches, evidently having that tartish flavour arising from want of proper maturation, and which is not constitutional as some would have it.

Turning to certificates in the Grape section. Mr. Thomson, Tweed Vineyard, Clovenfords, had a first for a basket of Gros Colman, exquisite in colour, even in size, enormous in berry, and delicious in flavour. This Grape as seen there is the handsomest of all black Grapes, and, with so much flesh as each individual berry contains, it requires to be started early in the season to mature itself before the late autumn months. The Rev. W. B. Bushby was awarded a first-class certificate for a box of Muscats, containing 22 lbs., in the same wonderfully excellent condition as his other two prize bunches.

Pine Apples were numerous and of fine quality, taking a very prominent place of interest amongst choice fruits. For one Smooth Cayenne, Mr. Stewart, The Glen, was first with an eight-pounder, handsome, and proportionate in all its arrangements. Mr. Laing, Pitcairnie, came second with one scarcely so large, and, if anything, rather ripe. Mr. Methven, Blytheswood, also produced fine fruit of this noble variety. For one Queen, Mr. Laing was first with a fine fruit nicely-swellled in the pips. Mr. Stewart exhibited three Smooth Cayennes, weighing 22 lbs., for which he received a cultural recommendation.

Apples and Pears of all the best keeping winter sorts filled a long table. Mr. Brunton was first for twelve dessert Apples, and took the same position for twelve baking Apples. In the former Golden Harvey, Downton Pippin, and Blenheim Orange were very fine. In Mr. Gillan's first four baking Apples were some fine Nelson's Codlin, Victoria, and Tower of Glamis. For six Ecklinville Seedling Apples, Mr. Anderson, gardener to the Earl of Stair, Oxenford Castle, was first with good fruit. Mr. Pearson, Beechwood, showed some very large fruit of Gloria Mundi. Mr. Macfarlin, Mordeun, had some splendid Lord Suffield's. Mr. Crosbie, Luss, Dumbarton, was first for a collection of six sorts of Pears; Winter Beurré, Moorfowl Egg, and Beurré Diel being prominent. Mr. Crosbie also obtained first in the special prize for the last-named variety. Mr. Allan, Ratho Park, had a first prize for Louise Bonne of Jersey. For any sort of dessert Pears, Mr. Cummings, gardener to the Earl of Wemyss, Anisfield, was first, with Hacon's Incomparable. For Marie Louise Pears, first came Mr. Anderson. Maréchal de la Cour was exceedingly fine in Mr. Anderson's first four dessert Pears.

Vegetables were staged in great quantities, many good, and some of an inferior order, the whole having rather a loose disorderly arrangement. For twelve sorts, Mr. Anderson, gardener to Mrs. Brown, Ashley, was first. His collection contained some good Early London Cauliflower, Sandringham Dwarf White Celery, Beetroot, Onions, Spinach, Jerusalem Artichokes, &c.; Mr. King, gardener to Sir G. Warrender, Brunsfield, taking the second place. For two heads of Cauliflower, Mr. Weatherston was first with large but not so compact heads as Mr. King,

who was second. The latter obtained the first prize for Savoys and Brussels Sprouts, Mr. Macfarlin taking first for Red Cabbages, and Mr. Murray for very large Leeks. For six stalks red, and six stalks white Celery, Mr. Black, West Lea, Murrayfield, had two first prizes. Mr. Pearson had first for some very large clean Onions. Market gardeners' produce was well represented by Mr. Gourlay, Musselburg; Mr. J. Douglas, Dalkeith; Mr. Aitken, Preston; Mr. Mathieson, Plewlands, and others, who contributed Broccoli, Savoys, Celery, Beetroot, Carrots, Onions, &c.

TESTIMONIAL TO MR. FROST, OF DROPMORE.

THE presentation to Mr. Frost, of Dropmore, took place on the 12th inst. at the New Dolphin Inn, Slough, where a number of the subscribers dined together. Dr. Hogg presided. Among the company present were the Rev. W. O. Thompson, Messrs. J. Standish, E. R. Cutler, Moore, C. Turner, R. H. Barrett, Fleming, W. Ford, P. Barr, Ashby, H. Turner, T. Ingram, Wills, Bird, A. Turner, Quilter, Capes, Bragg, Layton, Cunningham, Smith, Gregory, Swallow, D. Frost, Simpson, Powell, Lindsay, Heyliger, Rogers, &c.

The testimonial consisted of a silver cup, of the value of £25, manufactured by Messrs. Elkington, and a purse of nearly £200. The cup bore on one side a design of the celebrated Abies Douglasii, Mr. Frost having half a century ago planted a tree of that species in the Dropmore grounds, which is at the present time upwards of 100 feet high. On the other side of the cup was a design of the *Araucaria imbricata*.

The CHAIRMAN, having given the usual loyal toasts, said he had arrived at the event of the evening. He expressed his sense of his own inability to occupy the position which he then did, and would have desired that some one else had been selected for the post who had known Mr. Frost longer than he himself had done. However, he esteemed it a great honour to be deputed to present to Mr. Frost this token of their esteem and regard. They had met, as they were aware, to celebrate the fiftieth anniversary of Mr. Frost's service in one family [hear, hear]. Fifty years ago Mr. Frost entered as gardener at Dropmore. When one thought of the changes of fifty years, and of the rapid advances in horticulture, one was almost induced to identify Mr. Frost with that advancement. Fifty years ago the horticulture of the country was almost, if not altogether, in the same state in which it had been for the previous century. Up to fifty years ago the literature of horticulture had made no advances, and with the exception of old John Abercrombie, a most creditable author, there was no other author of great note whose name was worth recording who did anything towards the art of horticulture. Fifty years ago the Horticultural Society of London was in its infancy; Chiswick Gardens did not exist; Dr. Lindley, whose name was so much associated with horticulture, had scarcely been heard of; Thomas Andrew Knight, Sir Joseph Banks, and others, then took a lead in horticultural matters. But those names had become historical, the men had passed away, but here was Mr. Frost still living, having been actively engaged in the advancement of horticulture during the whole of that period [hear, hear]. It was their privilege that evening to meet together to pay honour and respect to their esteemed guest, Mr. Frost [applause]. There were three aspects in which to regard that meeting. One was testifying to their appreciation of a talented gardener; the second to show their esteem for Mr. Frost as an honest and faithful servant; and the third to express their estimation of Mr. Frost as a valued friend [applause]. It was not many years ago that he had the privilege of visiting Dropmore, and he must say that on that occasion, although he was a comparative stranger to Mr. Frost, he should never forget the trouble he gave himself to take him over the grounds and show him those objects which they were all well acquainted with, and so gratifying to those who visit them. The disinterestedness with which he acted, the trouble which he took, and the pleasure which it seemed to afford him in giving pleasure to others, struck him at the time as a prominent feature in his character. In reference to his qualifications as a gardener it was perhaps unnecessary for him to speak in an assembly like that, where all were gardeners except the clergymen—but clergymen were nearly always gardeners. Therefore it would be quite unnecessary for him to enter at all into the qualifications of Mr. Frost as a gardener, but at the same time it would not be out of place if he referred to what Mr. Frost had done since he had been at Dropmore, on one of the most uncongenial soils it was possible to place a residence or to try to make a garden. Before he left London he was asked who was Mr. Frost's predecessor. Well, he replied, he could hardly tell, Mr. Frost had been so long at Dropmore that he thought he never had a predecessor [laughter], but had made the place himself. Mr. Frost had done by his skill, by his ability, and by his great attention—for there was no doubt that the place never was got up in the style in which it was now existing without a great deal of painstaking having been bestowed upon it, which was greatly to his credit. Addressing Mr. Frost individually he said that must be an eventful

day in his life. It was a day that many men would desire to see. One did not always know who his friends were, and sometimes met with frowns and sometimes smiles; but on a day like that, when one's friends assembled as they were then, to testify by their presentation of a testimonial of their kindness and of their goodwill, and of the high estimation in which they were held, he thought it was a day in which many men would rejoice. He begged to present the testimonial to him in the name of the friends who were then around him, and in the name of many more who were not able to be present. He had a great number of letters, some of which were written in touching and friendly tones; but in the names of these friends he begged to present to him the testimonial, and also to state that a sum of £200 would be invested, and annually or half-yearly he would have the satisfaction of being reminded of the high estimation in which he was held [applause].

Mr. Frost, who on rising to respond was loudly cheered, said that if he was never proud of himself before he was on that day; for the kindness which had been shown to him far surpassed his expectations, for he had never thought of anything of this sort. Whenever any friends came to Dropmore, as Dr. Hogg came, he was pleased to see them; but if he was not always able to give them the attention he desired, it was because he had other duties to discharge, and from no disrespect. When he first went to Dropmore, Mr. Bailey had only just succeeded Mr. Kidd as gardener. He took charge of the gardens of Dropmore, after being in the position of foreman, in 1833. He spoke of his having served under Lord Grenville, Lady Grenville, and subsequently under Mr. Fortescue. During the time he had been at Dropmore he did not think he had ever received an angry word. On hearing that his friends were going to present him with a testimonial, Mr. Fortescue sent him a cheque for five guineas, not wanting his name to appear in the subscription list. Mr. Fortescue also wrote a very kind letter, which he (Mr. Frost) valued much more. After referring to some recent improvements effected at Dropmore in connection with the coniferous trees, Mr. Frost referred to the presentation, and thanked his friends for the beautiful cup presented to him. He never had so much pleasure in his life as seeing his friends come there to meet him, and concluded by wishing them all health and prosperity [applause].

Mr. C. TURNER, proposed the health of the Chairman, whose name, he observed, was a household word not only in England but all over the world, and who was always ready to do anything to assist the advancement of horticulture.

The CHAIRMAN returned thanks, and expressed his readiness to assist in every legitimate movement in the horticultural world.

Mr. BARR proposed "The Horticultural Press," which was responded to by Mr. Moore. There were other toasts justly complimentary to the Secretaries, Treasurer, and others.

PROPAGATING CYPERUS ALTERNIFOLIUS VARIEGATUS.

It may be interesting to some of your readers to know of a very simple way of propagating the *Cyperus alternifolius* variegatus. I have seen it used very much for decorative purposes, grown in small pots. Some time since I took a few tops off and placed them upside down in a bell-glass full of water which rested against the pipes in a stove. The water was generally over 70°. In a few weeks I found they had thrown out roots 2 inches long, and about twelve or thirteen young shoots each, four of which were more than an inch long.—R. F. B.

POTATO DISEASE.

SURELY I did not need any other confirmation of my statement that we know nothing of the Potato disease than that afforded by the last three-weeks' Journal. "W. G. S." thinks me very "daft" because I do not at once see that fungus is the cause of all the mischief; while Mr. Fenn equally wonders at my stupidity because I do not see that it is infallibly connected with electricity. Well, I suppose I am stupid, but it has always struck me that electricity is a most convenient thing to lay all ills to the charge of. Personally I confess to inclining rather to Mr. Fenn's opinion, but then it is equally unaccountable when you have got so far. Electricity existed before 1845, but the Potato disease did not in any virulence. And then, why should electricity spare one field and not another close by? or attack one kind and not another? And if it be the cause, how does it affect it? Nothing is more amusing to me than the assumptions of those who are ready to account for everything, as Mr. Darwin in his recent book calmly takes it for granted that apes are our progenitors, and founds his conclusions on a supposed fact which only his school

admits. So it runs all through. Rather commend me to a medical man with whom I was speaking of what I supposed to be an acknowledged fact. "Ah!" he said, "thirty years ago, when I entered my profession, I thought I knew everything; now I am learning every day that I know nothing." We may and must investigate, collect facts; but let us be careful how we dogmatise on those facts.—D., Deal.

P.S.—I have submitted some diseased bulbs to perhaps our most eminent vegetable physiologist, "M. J. B.," and he calls it a species of Tacon, a disease which attacks *Crocus* corms, and refers me to *Journal Hort. Soc.*, v. 23, where it is described as a kind of canker or ulceration of the corm, very similar to what happens in the Potato disease, which does not appear to be fungus, though fungi come afterwards. It is contagious.

[This passage of pens must now be closed.—Eds.]

MUSHROOM-GROWING.

KINDLY inform me how long you suppose a Mushroom bed will last. I commenced to gather about June, and continued gathering until the beginning of August. The bed is in a forcing house, where we force Rhubarb, &c., and next to it there is a small greenhouse. We make one fire do for both, having a flue up the greenhouse and down the forcing house. I followed your directions as to making the bed, and a better crop could not have been desired.

I commenced operations last spring by collecting horse droppings; as we have only one horse, we used to gather droppings from the high road on dry mornings, and placed them in a shed to dry in the same way as "AMATEUR" described at page 447. When I thought the material dry enough I gathered it into a heap, and when it commenced to heat it was removed to the house, well beaten, and spawned at about 75°. Then about 2 inches thick of loam was put on, and beaten firm. A better crop could not have been desired.—MARKET GARDENER.

[We are glad you have succeeded so well, and more especially as your practice closely resembles that recommended to "AMATEUR" at page 447.]

The question you put, How long a bed such as you describe, made in a sort of hothouse, may be supposed to last? is not so easy to answer. We ourselves have had fine beds in an early vinery, but we generally found they did not produce much after June, unless we covered them loosely with hay to keep the sun and the heat from the bed, and also used the precaution to syringe the hay or litter, so as to keep the bed cool and moist beneath. There could be no better place for Mushrooms than beds beneath the stage of a greenhouse or a moderately heated hothouse, provided there were means taken to prevent too much water falling from the plants grown on the open stage. We have seen shelves on the stage edged, so as to make them watertight for this purpose. A simpler plan would be to cover the bed with a little litter, and the litter with old pieces of oilcloth, tarpaulin, or even calico made waterproof, so that water falling from the plants would run past, and not on the bed. We have in former years been very successful by this mode in vineries and greenhouses. In fact, at one time we had scarcely a spare yard or two in a stoke-hole that we did not devote to tiers of small Mushroom beds, and we regulated our treatment according to circumstances. The first time we saw Mushrooms grown largely under steep stages for plants in greenhouses was at Colville's nursery many years ago, when that nursery, then close to Sloane Square, was still in its glory. We recollect an old practitioner telling us that the Mushrooms brought in as much money as the plants did.—R. F.]

PHYLLOXERA VASTATRIX.

[REPORT ADDRESSED TO THE FRENCH MINISTER OF AGRICULTURE AND COMMERCE BY THE COMMISSION INSTITUTED TO INQUIRE INTO THE NEW DISEASE WHICH IS AFFLICTING THE VINE.]

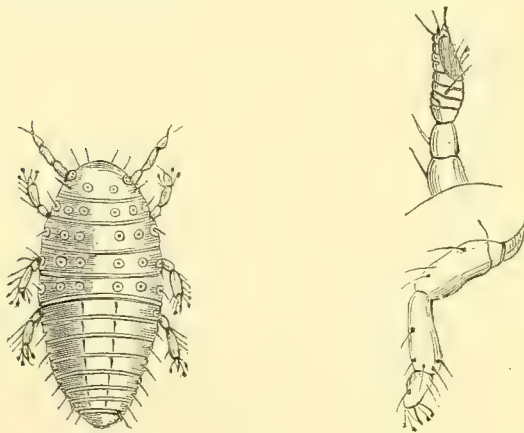
For some time several large vineyards in the south of France have been visited by a formidable and entirely new disease, and to which the Vines on which it has seized succumb as a rule at the end of the second year.

This disease, the origin of which is unknown, appeared for the first time in the valley of the Rhone during 1864 or 1865, but it was not until 1867 that it had attained such a prevalence as to excite alarm. In 1868 and 1869, however, it had become a regular scourge. Then it was that those wholesale desolations of wide tracts of country were seen, and which appeared

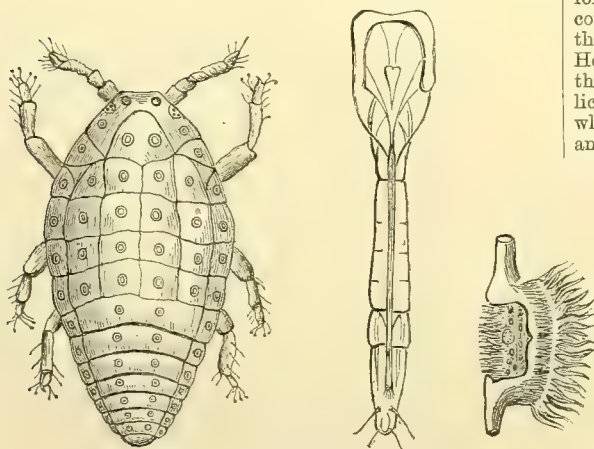
to be so much the more destructive because the first appearances of the evil had perhaps been overlooked. From this time the disease did not cease to spread, and it now rages from the department of la Drôme to the confines of la Crau, more particularly on poor, dry, stony, and damp soils.

The arrondissement d'Orange on the left bank of the Rhone, which is one of the most severely visited spots, has already lost during last year 3.600 hecatares (8.896 acres) of Vines out of the 10.880 (26.886 acres) which it formerly possessed. The department of Basse Alpes, which has until now escaped, is beginning to be attacked.

On the right bank of the Rhone the progress of the disease has not been so quick, but the departement du Gard has been affected in a great many quarters; that of l'Ardèche has infected Vines, and l'Hérault is already showing the early symptoms of the evil. The progress of the disease in Bordelais, where it appeared some years ago, has been slower than in the valley of the Rhone.



Phylloxera vastatrix—Wingless form.

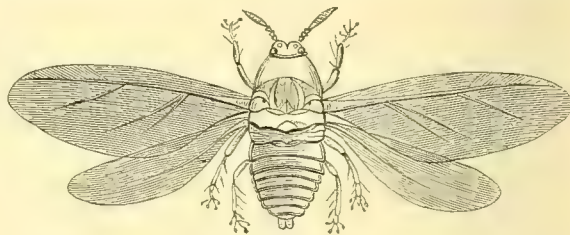


Phylloxera vastatrix—Wingless form.

The visible feature most characteristic of the new disease is the existence of a centre of attack in those parts which have been but a short time affected, and which extends itself without intermission. The portions of the Vine which are contiguous to the tainted part let their leaves fall, and grow yellow and yellow until they are quite dried-up. When the seat of contagion has grown to a sufficient extent, and when the disease is severe enough, instead of one there spring up several centres of attack. From the facts it has been generally remarked that the disease is propagated in two ways—progressively and intermittently. The gradual extension of various centres of attack, of which we have just spoken, shows us the first; their existence simultaneously at several far isolated points is proof of the second. The occurrence of many instances has taught us that the new disease of the Vine makes its way by irregular bounds, often abruptly appearing at great distances from the already ascer-

tained centres of contagion. When the roots of the afflicted Vines are examined it is easy to see that they have become considerably altered in their nature, for they are always soft and rotten; and the tissues surcharged and without any firmness, yielding to the pressure of the fingers.

These severe affections are due to a kind of insect which has been named *Phylloxera vastatrix*. This insect, which is almost invisible to the naked eye, takes up its abode in the roots of the Vine, and pricks them with its proboscis in order to extract the juices they contain. These repeated perforations most likely irritate the tissues and induce hypertrophy. They give rise to knots upon the fibres of the roots, which are quite peculiar to the new disease, and form a fundamental distinction between it and all other kinds of affections remarked in the Vine, such as the "pourridie" or "blanquet," a sort of rot produced by subterranean fungi, and the disease "Camargue" which has already caused the destructions of a large number of Vine plantations. It must at the same time be remarked that the *Phylloxera* never remain upon the roots which are beginning to decompose, but immediately remove from one decaying part to another which is as yet untainted. In fact, they are the cause of the rot, always going before it, and never following after.



Phylloxera vastatrix.

Until now there is not one of our kinds of Vine which has not been attacked by this disease, but it is reported that there are some American varieties in the outskirts of Bordeaux, which, although they have been surrounded by infected plants for three years, show as yet no signs of suffering from the new complaint. The insect which thus riots on the Vines belongs to the genus *Phylloxera*, and constitutes part of the order of Hemiptera, and more particularly of the sub-order Homoptera, the most commonly known of which are the grasshoppers, the lice, and the cochineal. It forms of itself a small family, which is a sort of connecting link between the lice or aphides, and the cochineal or coccideæ.



Phylloxera vastatrix—Galls.

According to the recently made investigations, the *Phylloxera* exists under two different forms—wingless and winged: it is not viviparous, but during the whole season and under both forms it only deposits eggs. We must add that the individuals hitherto observed, and they have not been few, have always been female. The male *Phylloxera* had not been found either

in the winged or wingless form, although long diligently sought after.

The principal changes which these insects undergo are the following: They hibernate upon the roots of the Vine as wingless insects, and never in the egg condition. So long as the weather is severe they remain sunk in a state of perfect torpor; but as soon as the warmth begins to make itself felt, all those individuals which the cold and the damp of the winter has spared begin to waken to renewed life. They feed with great avidity, and immediately begin to lay eggs. The increase of them soon becomes terrific, and never stops until October. It is during this time, which extends to seven or eight months in the south, that the Phylloxera works the greatest havoc.

The Phylloxera is essentially subterranean in its wingless state, and in all probability makes its way along the roots of the Vine, following the numerous gaps which it finds upon their surface. But it does not remain in this state. During the hot season some insects can here and there be seen with small appendages upon their corselet which are destined to become wings. These are the real nymphs, which soon throw off their covering, and appear as perfect insects provided with wings, and having the eyes characteristic of their species. It is in all likelihood after it has taken this form that the Phylloxera is borne-up and carried away by the wind to often very great distances, though it cannot be affirmed that even the wingless ones, in certain conditions, are incapable of being thus distributed.

We have said the winged Phylloxera is very rare. The number of these which have hitherto been observed bear no proportion to the myriads of wingless insects that can be seen on every part of the affected roots. Can this be natural? or is it a difference owing to the errors of observation made in ascertaining the fact which we now state? All the winged Phylloxeras which have been seen were females, who lay eggs and thus give birth to the wingless lice.

There is a fact of very great importance connected with the existence of the insect in the winged state. In the valley of the Rhone, and still more so in the department of Bordelais, a very few Vines were noticed during the summer, the leaves of which were covered with galls of a peculiar form, the warty protuberance being on the under and the opening upon the upper side of the leaf. This fixed character establishes a radical difference between the galls in question and all the other kinds of galls or excrescences which are found upon the leaves of the Vine. These galls are nests filled with winged lice, very much like those which are discovered upon the roots. These galls and the insects they contain are thought to be due to the agency of those coming from the eggs laid by the winged Phylloxera.

As we have seen, the Phylloxera has two different phases of life. It nearly always remains below the earth, though now and then a few individuals are liberated to the enjoyment of an existence in the open air. The underground life of the insect is well known, but not so that of the other form. It would, however, be very interesting and very useful if we could only ascertain precisely at what time of the year the transformation of the winged insect takes place, how long it remains alive, and upon what part of the Vine or of the soil it has its abode. The various ways of propagation in the Phylloxera, its origin, and the conditions most favourable for its development, should also be better known than they are. We might express a similar opinion with regard to the existence of the males and the period of fecundation. Let us hope that, systematically and diligently prosecuted biological studies will soon enlighten us upon these strange and momentous questions. It will perhaps be possible to destroy this insect, which is so very troublesome to get at during the time it lives underground, if we could only obtain a favourable chance of catching it on its excursions in the open air.

It is under these conditions, then, that the new Vine disease manifests itself, and although from the time of its discovery a host of remedies have been suggested for it, as yet not one of them has proved thoroughly efficacious. Are we going to find some more successful ones yet? Shall we—and it is not unlikely—derive some more valuable hints from those means which have been already tried? We dare hope so. It is, however, very certain that the effectiveness of the remedy is not merely dependant upon the nature and virulency of the matter used, but the manner of its application and the time at which this is performed will also always be of very great importance. The substances which are capable of killing these insects are very numerous; but in order to produce beneficial results care

must be taken that they are not of an injurious nature to the plant, and that they can sink easily to the depth of about 2 inches or more, so as to reach the vermin beneath. And here comes the real difficulty. Applications capable of destroying the insect without hurting the Vine, are what those persons who are seeking a remedy for the evil must endeavour especially to discover. Whilst awaiting that time when science shall have devised some means of averting this evil, the Commission advises cultivators and corporations to follow the example given in l'Hérault and la Gironde, where the diseased Vines have been torn up and the soil disinfected by the clearing-off and burning of the surface. The gall-bearing leaves should also be laid in a heap and burnt.

These remedial measures, which are analogous to those used in the case of the cattle plague, have the advantage of destroying a great number of insects, which would otherwise increase and communicate the disease to the surrounding Vines. The tearing-up of the diseased Vines and their employment with other combustibles for burning the infected soil, the collecting and consumption of the leaves bearing the galls, will restrict the onward progress of the evil and hasten the time indicating a diminution of it. August is the month in which the Phylloxera is propagated in the greatest numbers.

In instituting a prize of 20,000 francs for the discovery of a means for curing the Vines, the Minister of Agriculture and Commerce has shown a deep anxiety for the interests of Vine culture. Those persons who devote themselves to attaining this object will do well to remember that there is no scope for fancifulness in the involved questions of agriculture.

[The above is from papers communicated to the British Government, from which we purpose giving further extracts next week.—Eds.]

POTATO EXPERIENCES.

I BEG to send you my experience of Suttons' Red-skinned Flourball Potato. I procured direct from Messrs. Sutton, in 1871, some sets; they produced a fair crop and some large tubers. We failed in our endeavour to boil or steam them; they were neither good in flavour nor mealy. I gave the crop, about two bushels, to a neighbour. He planted them on different parts of his farm, and dug them this autumn. He failed also to dress them fit for table. They were shown to one of the largest salesmen in Spitalfields market, who pronounced them as only fit for pigs. The soil on which they were grown is light, with chalk subsoil. The gentleman to whom I gave them has grown this year two hundred acres of Regents and other Potatoes, so that he is not wanting in experience.—W. B.

[We have grown this Potato and found it excellent, both good in flavour and mealy, and but slightly affected by the disease.—Eds. J. or H.]

MONOTONY IN PLANTING.

MORE than one correspondent has applied to us to explain why plantations which they detail are unsatisfactory so far as not to be ornamental. One correspondent has appreciated the usual cause, though he employs an incorrect term; he says, "The large plantations at —, notwithstanding the alternations of hill and vale, are so unpleasantly uniform." We know the plantations, and their defect arises from their monotony. Uniformity is only another term for a just balancing of the parts. Monotony is sameness, and the more extensive the sameness the greater the dissatisfaction. The plantations referred to are all of Conifers, and planted in masses all of one form in some places, and all of one hue in other places. They should have been more varied in their combination—conical forms separated by lateral spreading forms, light-foliaged relieved by dark-foliaged, and the latter always planted at the innermost points of recesses to give the effect of depth.

We happen to have a view copied from nature in South America, and we publish it, not because it can be copied by planters in this country, but to illustrate the lesson we would inculcate. There Nature has grouped in admirable contrast the tall with the dwarf, the broad-leaved with the narrow-leaved, the dark-foliaged with foliage of paler hue; and where the work of man alone is apparent, a rustic bridge tells how such a structure harmonises with its surroundings, whereas a bridge of masonry would have been offensively misplaced. One who knew the truth of what he describes writes thus:—"To see the full beauty of an equinoctial forest, it is neces-

sary for the traveller to bury himself in its deep recesses ; and there, indeed, instead of the fatiguing monotony of our European Oaks and Firs, every tree has a character of its own, each has its peculiar foliage, and probably also a tint unlike

that of the trees which surround it. Gigantic vegetables of the most different families intermix their branches ; five-leaved Bignonias grow by the side of Bonduc trees ; Cassias shed their yellow blossoms upon the rich fronds of arborescent



Ferns ; Myrtles and Eugenias, with their thousand arms, contrast with the elegant simplicity of Palms ; and among the airy foliage of the Mimosa, the Cecropia elevates its giant leaves and heavy candelabra-shaped branches. Of some trees the trunk is perfectly smooth, of others it is defended by enormous spines, and the whole are often apparently sustained by the slanting stems of a huge wild Fig tree. With us, the Oak, the Chestnut, and the Beech seem as if they bore no flowers, so

small are they and so little distinguishable, except by naturalists ; but in the forests of South America it is often the most gigantic trees that produce the most brilliant flowers ; Cassias hang down their pendants of golden blossoms, Vochisias unfold their singular bunches ; corollas, longer than those of our Foxglove, sometimes yellow or sometimes purple, load the arborescent Bignonias ; while the Chorisias are covered, as it were, with Lilies, only their colours are richer and more varied ;

Grasses also appear in the form of Bamboos, as the most graceful of trees; Bauhinias, Bignonias, and Aroideous plants cling round the trees like enormous cables; Orchidaceous plants

and Bromelias overrun their limbs, or fasten themselves to them when prostrated by the storm, and make even their dead remains become verdant with leaves and flowers not their own."

ARAUCARIA EXCELSA, OR NORFOLK ISLAND PINE.

THE Norfolk Island Pines, forming the subject of our engraving, may be said to be the great feature of the delightful

Sydney Botanical Gardens, and are supposed to be the largest in Sydney. The foremost one in the picture is estimated at



ARAUCARIA EXCELSA IN SYDNEY BOTANIC GARDENS.

104 feet in height, 30 feet in circumference of the trunk on the level of the ground, and 30 feet at the extreme end of the lower branches, which are each about equal in length from the trunk. The time when this monarch of the gardens was

planted is uncertain, but it is evident it was done at the very first settlement of the colony. There are other trees of this class in the gardens, as well as in many private enclosures, all of which appear in a flourishing condition, but none others

reach the size and grandeur of our subject.—(*New Zealand Illustrated Paper*.)

[The *Arancaria excelsa*, formerly described by Lambert under the name of *Dombeya excelsa*, is a native of New Caledonia, and was discovered there by Captain Cook on the occasion of his second voyage. He saw it growing at the extremity of Queen Charlotte's Foreland, and in some off-lying islands, one of which was so thickly covered with it as to be named by the navigators "The Isle of Pines." One specimen is mentioned by him which was 120 feet in height and 11 in diameter, but there were others that had a much greater altitude. Cook seems to have thought the loftiness of their stems and the length of their branches, as well as the nature of the wood, which, he says, was close and tough, qualified them for making good masts and spars. Captain Hunter, however, who subsequently visited the region, was of a different opinion. He describes the wood as being exceedingly heavy, spongy, and short in the grain, and only fit for building purposes. The trees themselves were often very defective, for in obtaining seven spars he was obliged to cut down thirty-four of them, out of which twenty-seven were useless. Lieutenant King corroborates this statement of the badness of the wood, and also says that the turpentine coming from them was inapplicable for marine purposes. When the trees grow old enough to bear fruit, the young loosely imbricated leaves fall off, and are replaced by much smaller and more closely appressed ones, which give the whole plant an almost different appearance. It was introduced into this country by Sir Joseph Banks in 1793.—Eds.]

THE EMERALD GEM PEA.

MESSRS. SUTTON, of Reading, have forwarded us the following letter:—

Royal Berks Seed Establishment, Dec. 10, 1872.

MR. A. F. BARRON.

DEAR SIR,—We are in receipt of your letter, informing us that you are requested by the Fruit and Vegetable Committee of the Royal Horticultural Society, to ask us whether the names "Suttons' No. 1 Green," and "Suttons' First of All," refer to the Pea we are offering for sale as Suttons' Emerald Gem.

As we had already informed you in our letter of November 20th, and as we have also stated in our advertisements repeatedly in the horticultural papers, that they do refer to the same Pea, the Committee cannot need any repetition of this statement for the sake of information; we conclude, therefore, that that body has been urged by certain of its members to write a letter, which should imply that we were influenced by some unworthy motives in adopting the present name.

We therefore assert distinctly that no other object ever entered our minds than that of giving the Pea a name suited at once to its earliness and to its peculiar green colour.

If it is sought to be inferred that the name was changed because no Certificate was awarded to it, we deny positively that this had any consideration with us. Indeed, although we have introduced many new Peas and other vegetables to the public on our own responsibility, we have never asked for a Certificate for any Pea from the Royal Horticultural Society's Fruit and Vegetable Committee, as we find it quite unnecessary for the successful conduct of our trade, our own trial ground being most efficient for our own guidance, and our own recommendation being accepted as quite sufficient for our own customers.

In the present case it must be obvious that we could not have expected that Committee to judge of a Pea from a few plants sent in a pot, which were, indeed, only sent as a curiosity on account of their peculiarity of colour, which colour we had not seen since the days of the old *Daneacroft Rival*, which we believe has long been extinct.

We have, as you know, been requested to send "novelties" for trial at Chiswick, and this year we sent a small sample of this Pea to you, as we did also to a few of the leading horticulturists in this country and abroad.

Not considering it of any importance to fix on the permanent name until we offered it for sale, we sent it to you under a provisional name familiar to us during our trials—viz., "No. 1, Green." When a few growing plants in a pot were sent to the Royal Horticultural Society's Gardens at Kensington, they were labelled "Suttons' First of All," believing at that time it would prove even earlier than our "Ringleader," as, indeed, is still the opinion of several of our correspondents. From others, however, we had results of trials in which it was stated that it came in the same time as *Ringleader*, and therefore we felt it might be better to give a name which would be merely descriptive of the characteristic colour, and accordingly named it "Emerald Gem." It is under this name alone that it has been offered for sale.

Our letter to you of November 20, and our advertisements in the gardening papers, render it impossible that the London seedsmen belonging to the Royal Horticultural Society's Fruit and Vegetable Committee could be in any doubt as to what the Pea was which they were purchasing.

As soon, however, as we found that an attempt was being made to shake the confidence of the public in our new Pea, we caused a circular letter to be sent to every customer in this country who had ordered the Pea, calling attention to these adverse statements, and offering to cancel their order if they desired it. The result was, that only one of the whole number did so, whilst two of the oldest and largest houses in the London seed trade (not members of the Committee), replied as follows (and others to similar effect):—

"Dec. 2, 1872.—We telegraphed you to-day, in reply to your letter of the 29th ult., about the Emerald Gem Pea. We do not pay much attention to the nonsense that is written about new seeds in the paper, but prefer taking our own opinion—we certainly wish to have all we ordered."

"Nov. 30, 1872.—In reply to your letter to hand this morning, we beg to say we have no desire whatever to cancel the order given to you for Emerald Gem Peas, and we have every faith in all the novelties you send out."

If the members of the seed trade on the Fruit and Vegetable Committee included, as formerly, only wholesale merchants, probably no exception need be taken to the arrangement.

It has been kindly suggested by several Fellows of the Royal Horticultural Society that a member of our firm should join this Committee in self-defence, but we prefer not thus to sanction and help to perpetuate the practice of seedsmen awarding Certificates of Merit to each other's novelties.

We should have publicly remonstrated some weeks since as to what appeared to be a deeply-laid scheme to injure our reputation, but we then felt that the matter would soon show itself to the public in its true light, and that those members of the Committee who saw they had for a time been misled, would have been able to prevent our being called upon to vindicate our conduct in this matter.

You are aware that last spring you received two samples of Peas for trial, which both showed the same peculiar green-coloured haulm and pods; the one sample was sent by us, the other by Mr. Laxton.

We know that our own Pea, after carefully watching it in our own grounds for the several years required for getting-up a stock, has proved itself as early as any of the earliest Peas, and eight or ten days earlier than "Emperor." We need not remind you that the last time "Daneacroft Rival" was sown at Chiswick, in the year 1860, it was represented in the "Transactions" of the Royal Horticultural Society as coming in the same day as *Emperor* and several other Peas, now classed as second early, and about a week later than *Dillistone's*, which was placed alone at head of Synopsis; this quite coincides with our own experience. Yet it is this Pea, "Daneacroft Rival," which it is now sought to be set forth as synonymous with our *Emerald Gem*.

We could not undertake to speak for the sample sent by Mr. Laxton; but we may state that in September last that gentleman wrote us that with him his Pea, called by him "Daneacroft Early," came "slightly earlier than most of the modern early sorts," and "that it was not the same as 'Daneacroft Rival,' which 'is a much later Pea,'" and he says, also, that he had written to Chiswick to the same effect. Mr. Laxton now writes, under date of December 6th, the opinion of his man to the contrary, which, he kindly tells us, he has also forwarded to the Committee.

If Mr. Laxton's own opinion is correct, it would seem that he has a Pea as forward as ours, of the same peculiar colour (which is quite possible); but we have not seen it, nor did we hear of it till now, whereas our own has been grown during the last five years on our own trial farm, from a very small quantity purchased from the raiser in 1868, after the first year's trial; but if it is possible that Mr. Laxton has preserved a stock of the old "Daneacroft Rival," and sent a sample of the same to the Royal Horticultural Society, Chiswick, as his man now thinks, then the Committee must have failed to notice the fact that our Pea was forwarder than his, which oversight is scarcely surprising if, as we believe, they inspected the Pea trials only once in the whole season.

We may remark that we find it absolutely necessary to personally examine our Pea trials daily during the blooming and podding season.

We do not for a moment impute either to Mr. Laxton or his man; or to the Committee as a body, or to those engaged in the Pea trials, any desire to act unfairly in this matter; indeed, we are satisfied they would not do so; but it is impossible to ignore what is said of our Pea by those who had similar samples sent at the same time as we forwarded the one to you at Chiswick.

It is easy to decri what are called testimonials, but it is not so easy to discredit the statements concerning this Pea made by those who are admitted to be among the leading horticulturists of this and other countries; which statements we have recently published in our advertisements. Some of these authorities are doubtless personally known to you as being both good judges of what a first early Pea should be, and also as quite incapable of misrepresenting one when they have tested it.

We forbear to mention in this letter some additional facts which have come to our knowledge in connection with this subject, and we shall be glad if your forthcoming official report of "Trial of Peas" at Chiswick is such as to render it unnecessary for us to protest against it, or further to refer to this subject.—SUTTON & SONS.

PRIMULA JAPONICA FROM SEED.

WE have here a nice lot of plants in 60-sized pots, raised from the seeds of a plant that flowered this spring. The seed was sown as soon as ripe in a pan of sandy loam and peat, and placed in a cool house with a piece of glass on the top of the pan. The soil was kept moist until the seed began to germinate, then the glass was removed. There were plants in the rough leaf in seven weeks. The seed was sown in the middle of June. The plants have now leaves from 2 to 3 inches long, with roots coming through the bottom of the pot.—H. DROVER, *Lower Grounds, Birmingham*.

NOTES AND GLEANINGS.

In the tropical house at Kew a great many *ANTHURIUMS* can now be seen in flower. Conspicuous among them is *A. aculea*, the spadix of which is about 8 inches long and of a light purple colour.

— THERE may be seen in the kitchen garden of Mr. George Bolster, Lower Scarragh, near Mallow, a *PEAR TREE* IN BLOSSOM FOR THE THIRD TIME this year, the fruit being nearly ripe from the second bloom. Although the late rains and high winds have injured the bloom, it is not quite gone yet.

— THE fine hairs which cover the shoots of the *BAMBUSA THOUARSII* are used by the Chinese to rid themselves of persons obnoxious to them without exciting the suspicion of the law. A few of them are taken and put into the pocket handkerchief of the victim, who, after inhaling them, becomes afflicted with all the symptoms of a severe inflammation of the brain. This rapidly increases, and the unfortunate sufferer at last expires, after undergoing the most intense and unallayable tortures.

— On the 11th inst., at Newark, died Mr. W. H. CAPARN, nurseryman and seedsman, aged 69. He had been parish clerk and secretary to the savings-bank for nearly forty-five years.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Broccolis will be advanced by the recent mild weather. Look over and select the most forward for protection against the return of frosty weather. Continue to remove all dead and decaying leaves. *Cabbage* plants may still be planted or pricked-out from seed-beds, and those planted in October should have a little soil drawn to them. Provide for a successional supply of *Asparagus* and *Sea-kale* in whatever way forcing is practised. Proceed with trenching. The examination of old, or the formation of new drains, if required, should on no account be forgotten. The importance of this matter is not sufficiently estimated. Pot *Mint* and *Sorrel* for forcing. *Shallots* and *Garlic* should also be planted. Sprinkle wood ashes or lime over the early *Peas* as they appear above ground. The weather that causes their appearance excites insects into activity. Set traps regularly for mice. A bed of *Radishes* should be sown directly on a warm slope. *Potatoes* may occupy the bed as the principal crop; the *Radishes* may be removed in due time without injury to the *Potatoes*, especially if sown in drills. We would direct attention to the importance of some extra care in the preservation of the seed. The Potato has undoubtedly been blessed with a most singular hardihood of constitution, or by this time it would have been extinct, or nearly so, for what plant, or rather tuber, has endured so much abuse and for so long a period? By abuse I mean premature sprouting and the exhaustion consequent upon this and the fermentation in pits. The latter process is unknown to the plant in its native country. Lancashire, it is well known, is famed for the production of excellent *Potatoes*, and a neighbouring district called Walley-in-Wirrel has long been noted for very early *Potatoes*, which find their way into the Liverpool and Manchester markets at a period so early as would astonish folks in the southern parts of this island who have a much superior climate to deal with. A considerable tract of Potato ground is let out in small portions to industrious cottagers. These for the most part keep their seed *Potatoes* in their upper rooms, frequently spread beneath their bed, about 3 or 4 inches in thickness, fermentation being sedulously avoided. The *Potatoes* in this situation begin to sprout in December, and in the course of January many of them are planted, great care being taken not to rub off or injure the sprouts. When the *Potatoes* are breaking the ground they are covered, as the market gardeners cover their early *Radishes*, with a soft, light kind of grass which grows in the neighbourhood, and which is cut and dried for the purpose. They are uncovered in fine days, and covered-up in due time whilst the soil is warm.

FRUIT GARDEN.

Prune and nail wall trees. Early attention to these important and tedious operations cannot be too earnestly recommended. Unless the weather be very favourable, planting deferred until this time had better be delayed until February.

FLOWER GARDEN.

A thorough cleaning should once more take place in all pleasure grounds, as by this time all the decayed leaves are down. Rose stocks may now be procured and planted. They will transplant safely at this period provided the roots are kept damp. *Fuchsias* in beds or borders may be cut down and mulched over. If it is desired to preserve any large specimens with their tops on, a row of stakes may be driven round in a circle and surrounded by a mat, the interior being stuffed loosely with clean new straw. The top of this may be thatched to exclude wet. Before enclosing, however, it will be well to pluck off the leaves, as these encourage mouldiness. At this season of the year the amateur's attention must be directed principally to the effectual protection of his plants, though it must be borne in mind that I am very far from being an advocate of the massing system which many florists adopt, the effect of which is seen in *Carnations* with yellow and spotted foliage, *Auriculas* and *Polyanthuses* which at their proper blooming season will not bear a truss of flowers, *Tulips* not only cankered but very far in advance of the season, &c. The great secret is to keep the plants secure in bad weather, but at all other periods to let them be fully exposed to the action of the atmosphere, so that they may grow-up stiff and strong, and be enabled to withstand severe weather of an ordinary character. Nothing is more prejudicial to florists' flowers than cutting winds; they will bear frost with impunity when unaccompanied with the rude wintry blast. Shelter is then indispensable, and those florists who have a bed of *Polyanthuses* under a north-east hedge of Hornbeam (this I prefer, as it retains its foliage through a great part of the winter), will be able to bear testimony to its efficacy. Net and cover *Tulip*-beds with bast mats, and if possible do not let the surface be frozen. *Dahlias*, though most likely stored away, will require occasional attention; those placed under a green-

house stage or in a similar situation will be safest, yet from the wet autumn and the sudden frosts just previous to their removal, I fear that many will suffer. Turn compost heaps, and expose them to the action of frost, &c., and when opportunity serves, mend shades, glasses, paint flower-sticks, cut lead pegs for layering *Carnations*; in fact, attend to all minutiae in order to insure success.

GREENHOUSE AND CONSERVATORY.

Constant removal at this period will be necessary, for where a good reserve stock is kept nothing should be suffered to remain which does not contribute to the gaiety of this house. This change renders the whole more interesting, for in former days, before the special cultivation of winter flowers was understood, a most tiresome monotony prevailed; the Oranges, Myrtles, Oleanders, with huge American Aloes, appeared as if nailed to the spot. The advantage of observing and maintaining strictly the niceties of order and judicious arrangement in the distribution of plants is not only repaid by the gratification afforded to the eye, but will be acknowledged by the improved health of the plants. As the practice is not unfrequent, the recommendation that a very limited amount of artificial assistance in temperature is required by the admitted occupants of the greenhouse may not be inappropriate. In houses unfavourably situated in damp or shady situations, fires must be brought more frequently into requisition, not so much to increase the temperature as to allow of a constant and active circulation of air to counteract the injurious effects of damp. Considerable injury is sometimes done to plants by the regular use of impure and unwholesome water; rain water is naturally more suitable than any other for plants. The decay and removal of *Chrysanthemums* and other plants which share the protection of the conservatory merely during their blooming season, will give place to the forced flowers.

FORCING PIT.

The forcing pit should be regularly filled from this period with *Roses*, *Lilacs*, *Azaleas*, &c. Fire heat should be applied very moderately, more particularly at night or during dark foggy days. Take advantage of a little extra application of fire heat in the fore part of the day, more particularly on light and sunny mornings. Plants in this structure, as soon as forward enough in bud to open in the conservatory, should be removed. W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

NOTWITHSTANDING the dull weather, we have never had forced *Asparagus* in a frame over a dung bed more beautifully green, and that, with good heads, is a great charm. *Sea-kale* in the Mushroom house has been very useful, especially when cut short and stubby. The last-spawned bed of *Mushrooms* but one is coming in nicely. There is a piece to succeed it, earthed-up three weeks ago, a piece that may be spawned on Monday, and another piece, treated as stated at page 447, that most likely may be spawned a fortnight hence. Three older pieces are still bearing, though we do not expect much more from the first piece. With limited space we depend much on frequent successions. Our aim is just to have one piece at its very best at a time. For all shelf beds we find they get a nice fillip from a successional bed being made on the ground beneath the shelf bed. A little steam, even if in moderation, does no harm. But, there, everybody will say we have now had enough of *Mushrooms* for some time to come. We had gravel driven on the one frosty morning, but now in the evening of the 14th we have a soaking rain again that interferes with all out-door work, except that of the roughest kind, and even that can be but imperfectly done in such weather.

ORNAMENTAL DEPARTMENT.

Violets.—Somehow from our carelessness we have pretty nearly lost our old favourite the Neapolitan *Violet*, but we must take to it again, as large blooms under glass are very sweet-scented. We mentioned last week that *Violets* out of doors lose their scent when frosted, even though they preserve their colour and apparent freshness. We found that what we had under glass would by no means meet our demands if frosty weather should set in. We had satisfied ourselves that covering the plants out of doors with litter or mats injured them, and the blooms thus obtained were of little worth. Having at liberty a piece of a deep earth pit, with boards back and front, on which we could lay some old sashes across, we filled the bottom with warm tree leaves, placed on these 6 inches of rotten dung, and on that enough of good soil to turn-in in rows strong large plants, with good balls, of the Czar and Russian *Violets*, so that we might make sure of gatherings if we should have severe weather in winter, and they will be all the cleaner sweeter, and longer-stalked from having the glass over them. A little protection will keep out all but the severest frost.

In many little gardens a one or two-light box that does much work in spring and summer is allowed to stand idle all the winter. Now closely filled, what nice posies of *Violets* might

be obtained from it all the winter before the frame was set to its usual work; and of all modest, sweet, retiring flowers, perhaps no one is more prized by an invalid than Violets.

Cut Flowers.—When much in demand, these in this dull weather must be made the most of, for large trusses with more than half of the buds unopened must not be thought of unless they are very plentiful. Cyclamens now come in well for buttonholes and small bouquets, enriched with Maiden-hair and Violets; and what is in their favour, though very hardy comparatively, when the buds show freely, and the pots are full of roots, they will stand a good amount of artificial heat, and bloom well with it. These, Cinerarias, Primulas, Camellias, late Fuchsias, Rhododendrons, Eranthemums, Justicias, Euphorbias, Begonias, Poinsettias, and Hyacinths coming on have had waterings of clear cool manure water. Where it can be had, half-dried sweet cow dung is about the best at this season. Horse dung and sheep droppings, if the sheep are richly fed, are quite hot enough in this dull weather if not applied very weak.

Air-giving.—In such dull, cold, uncertain weather we prefer giving less air even to cold frames and pits, and in houses heated artificially we would keep-up the requisite temperature by giving less air, and thus require less artificial heat. Even after such a keen frost as we had this week, and the sun comes out to cheer us, it is better in every way to let the fires down, so as to give comparatively little air, as it is in every way more beneficial to the plants that the temperature should rise 5° or 10° above the daily average by sun heat after a little air is given, than by keeping-up the fire heat to render necessary large openings for cold frosty air.

Watering.—Thousands of plants would expostulate loudly if they could, when, after being more than gorged in this dull weather, down comes a pouring from the watering-pot on them, as a mere matter of course. Indiscriminate watering sends many a fine plant to the rubbish heap. The rule now is not to water until watering is needed. This is easily ascertained by the look of the plant, the ringing of the pot, or even getting a finger down somewhat beneath the surface. The experienced can almost tell at sight whether a plant is dry, or moist, or waterlogged. This latter event is not so likely to happen when the drainage is all right, and done as lately advised, and the pot stands on a wood, slate, or stone shelf or platform; but if the pot stands on sand, ashes, tan, and different kinds of refuse, it will be necessary to lift the pot frequently and see if the outside of the hole at the bottom is all right, as even with sand we have often found the hole so blocked that water could not pass.—R. F.

TO CORRESPONDENTS.

N.B.—Many questions must remain unanswered until next week.

COVENT GARDEN SALESMEN (Bracknell).—You will find a list of them in Kelly's "London Post-office Directory."

CORM ON GLADIOLUS BULB (Octogenarius).—The woody corm at the bottom of the Gladiolus is the remains of the bulb which you planted, and from which the young ones have extracted all the good, and left it utterly worthless. It is about as much worth keeping on as an old Potato set.

TERRA COTTA STOVES (E. L.).—We have had no experience in the use of these. Write to the maker, he may give you references.

SERBES FOR BANK (F. H.).—The bank dividing the lawn from the kitchen garden, if its incline is steep, we should plant with common Laurels, peg down the shoots, and cut them so as to form a sloping bank. If not steep, we should plant with variegated and green-leaved Hollies, having the common Holly on the side next the kitchen garden, and thickly so as to form a hedge. The walls along the sides of your walk-borders would be dull in winter if covered with fruit trees. We should cover them with climbing plants or those shrubs suitable for covering walls. If you have no other place for a display of shrubs, we would take the half-length of the wall and lawn borders, planting the part most distant from the house, reserving the other part for flowers; or you could have shrubs in the wall borders, and flowering plants in the lawn borders.

AIR-ROOTS ON HEATHS AND EUPHORBIA (An Old Subscriber).—The most likely cause is keeping them in much too close and humid an atmosphere; indeed, it must be saturated with moisture. Give them more air, lessening the supply of water, and especially moisture, considerably. The Euphorbia with "thorns" is *E. splendens*.

BLACK GRAPES WITH MUSCATS (Idem).—Gros Colman, Gros Guillaume, Lady Downe's, Alicante, and Mrs. Pince's Black Muscat. The first, second, and fourth have the largest bunches.

DESTROYING AMERICAN BLIGHT (Idem).—Dress the trees now with paraffin oil, applying it with a paint brush, rubbing, or rather brushing, it into every hole and crevice. The thick roots should be pared and dressed with the paraffin. The soil removed should be taken away, the roots covered with rich soil, and the latter mulched with manure. The paraffin should not be put on carelessly and spilled on the ground over the roots, but be used with care, applying it, however, effectually to the stems and thick roots.

TRANSPLANTING HEATHER (J. P. of York).—The ground now covered with grass, though surrounded with Heather on all sides, will take many years to become covered. It would be covered much more speedily if you were to have it deeply dug, if you could do so without bringing up bad soil. The grass as it is will overgrow the Heather, but by burying it you will check its growth; and as the ground has previously had Heather upon it, you will probably have a good growth of seedling Heather in two or three years, which, with the Heaths you plant, will soon cover it. Probably the soil intended for

Heather is thin, in which case we should merely take off the grass as thinly as possible, knock off all the soil you can, and plant with clumps of Heather. From now up to March, or the Heather beginning to grow, is a good time to plant, but the earlier it is done the better. Take the plants from spots where the Heather is young and has just attained the flowering state; lift them in clumps of a foot to 2 feet square, with 3 or 4 inches thick of soil; make holes to suit, and fill up neatly all round, but do not plant deeper than before nor cover the Heather with soil. We put in some such clumps three years ago at from 4 to 6 feet apart, and they now nearly meet. We also dotted double Gorse amongst them irregularly at 6 to 12 feet apart, introducing a few Rhododendrons, which may not suit your hilly spot; and it is difficult to tell whether the golden colour of the Gorse, the purple of the Rhododendron, or the Heather is most beautiful. We like this mode better than having all Heather.

STRAWBERRY CULTURE (Old Subscriber).—We suppose the plants have been cleared of runners, the ground of weeds, and the soil lightly loosened between the rows and about the plants. If not, it should be done at once, and the plants well manured, placing the manure neatly about the plants without covering their crowns or leaves. Cover the whole of the ground about an inch thick if very rotten, or 2 or 3 inches thick if the manure be only partially decomposed, which is best. In March stir the ground lightly with a fork, and the plants will only need watering if the weather be dry after the fruit is set. Some clean straw or slates should be placed round the plants under the fruit to keep it clean.

GAS STOVE FOR FRANKY (M. Willett).—If you enclose four postage stamps with your address, and order No. 341 of this Journal to be sent, you will there find drawings of various gas stoves, and you may select the most suitable. Any gas stove would keep the frost out of a small structure, but it must have a funnel to carry the products of combustion into the outside air.

MELON SEEDS (J. F.).—Thanks for the Melon seeds. We trust to give it a trial next year, and hope to be able to report satisfactorily of its good qualities, especially of the fruit not being liable to crack.—G. A.

PRUNING GOOSEBERRY BUSHES (C. W. Y.).—The proper mode of pruning Gooseberries is to dispose the main branches 9 inches to a foot apart, keeping the centre of the bush open; and if they are closer than that, thin them out to as nearly that distance from each other as the condition of your bushes will permit. If you have not sufficient branches at the required distance, leave the requisite number of shoots, merely taking off their points; and the extremities of the main shoots should be cut back to 2 or 3 inches if you do not wish for increased size in the bushes, but if you need increase merely take off their points. All shoots of the current year, except those mentioned, should be spurred or cut back to within an inch of their base. The short stubby shoots that will be clustered with buds are not to be shortened, for they are the spurs on which the fruit is for the most part produced.

CHRYSANTHEMUM TREATMENT (Eve).—Take the cuttings that come from the base of the plant as soon as they are sufficiently long—say 3 inches, pare the base smooth with a sharp knife, remove the leaves halfway up the cuttings, and insert them that depth in sandy loam, placing three cuttings in a 3-inch pot. Put the cuttings in a hotbed of 60° to 65°, and they will soon root if kept close and shaded. They should then be potted-off singly in 3-inch pots and returned to the frame for a few days, and when established remove them to a cold frame, and shift into larger pots as soon as those in which they are growing are filled with roots. They should be kept in the frame until April, or till May if the weather be cold, and then be placed out of doors on ashes in an open but sheltered position, shifting as required, and giving them their blooming pots by the end of June. Nine or 11-inch pots are suitable for the large-flowering kinds, and 8 or 9-inch for the Pompons. The soil most suitable for potting is two parts turfy loam, one part leaf soil, one part old cow dung or well-rotted hotbed manure, and one-sixth part of sharp sand and bone-dust, the whole well mixed. The plants should be stopped when 6 inches high, and again when the resulting shoots are 3 inches long, continuing the stopping up to the middle of July—not afterwards. Peg and tie-out the shoots so as to form good-shaped plants. Liquid manure may be given at every alternate watering after April until the buds show colour. Never allow them to flag from want of water. Good examples of the Japanese is Dr. Masters and The Sultan; of Quilled, Cry Kang and Quilled Pink; of Large-flowered, Mrs. G. Kundle and Golden Beverly; of Pompon, Fairest of the Fair and James Forsyth; and of Anemone-flowered, Empress and Princess Thyrza. With those you will be able to tell the different varieties.

LASIANTRA MACRANTHA MANAGEMENT (M. D.).—It is propagated by cuttings of the young shoots after they become rather firm, or what is termed "half ripe," taking off the growing point about 3 inches long, removing the leaves from the lowest joint, and cutting transversely below them. Insert the cuttings up to the leaves in two parts sandy peat soil, with one part each light loam and silver sand. Drain the pot one-third its depth, fill to within half an inch of the rim with the compost, and to the rim with silver sand. Water gently, let the pot stand a few hours, and then put in the cuttings about an inch apart round the sides. Set the pot in a close frame, or cover with a bell-glass in the stove, keeping shaded from sun. The cuttings will strike more speedily if placed in a hotbed of 75° to 80°. When rooted pot-off singly and return to the frame for a few days, and then place in the stove. It is decidedly a stove plant, but will succeed in an intermediate house—one having a winter temperature of 50° at night and 55° by day from fire heat. In an ordinary greenhouse with us it does not succeed. The seeds you have will grow freely if sown in light soil and placed in a hotbed, but they will not flower so soon as cuttings: they make the finest plants. The only objection we have to this plant is its irregular bad habit. It grows very freely, and blooms also finely when of good size—we have plants 8 feet high. The only way to keep it in shape or to form specimens is to stop the plant so as to check its upward tendency and cause the production of side branches. Increase the number of these by stopping. If this be not resorted to, the plant will go up several feet with but few side branches before it flowers, and the lower branches are so weak that no art of man can prune it so as to form it into a good specimen; therefore the plants should be stopped when 6 inches high, and repeatedly, as the fresh growth extends upwards; the lower side shoots being first stopped at 6 inches, and afterwards at 3 inches. By pursuing this treatment for two or three years we have obtained good plants in as little time as it takes to flower them when allowed to grow naturally. Keep the plant rather dry in winter, not allowing it to flag. Repot in spring when beginning to grow, and do not give large shifts. It can hardly have too light and airy a position. It would probably become too much drawn-up in a vinery, but if you can give it a light and airy position it would no doubt succeed if kept dry in winter, but not so dry as to cause the leaves to flag.

WINTER NELIS AND JOSÉPHINE DE MALINES PEARS (Nelis R.).—The young wood of Joséphine de Malines is stronger and the bark lighter in colour than that of Winter Nelis. The shoots are sometimes inclined to droop

Winter Nelis is a more compact-growing tree, and the young wood is very slender.

EMIGRATING GARDENER (A Subscriber).—The answer in our last number has caused a letter to be sent to us which might be useful to you. We will send it if you forward your address.

CEDAR WOOD OF LEAD PENCILS (J. T.).—The Bermuda Cedar (*Juniperus bermudiana*), is the tree that furnishes that fine, fragrant, red wood with which black-lead pencils are covered in this country; it was formerly much used for furniture and wainscoting, but it is now chiefly employed for the purpose just mentioned, for lining cabinets, and for fancy wood-work. The wood is red, very light, fragrant, and almost incombustible.

BONES FOR MANURE (G. Allen).—To dissolve bones for use as fertilisers the cheapest treatment is with oil of vitriol, sulphuric acid, and we have detailed the process in previous volumes. Bones ground small also become speedily yet gradually useful to the crops.

CAMELLIAS FOR TRELLIS (Centurion).—Since we replied to you we are informed that Messrs. Veitch, King's Road, Chelsea, have a fine lot trained suitable for such purposes. They were moved last autumn so as to keep them saleable.

TUBES FOR ROSE-SHOWING (C. J. D.).—Any of the leading seedsmen who advertise in our columns could supply you.

PROLIFIC PLUM (F. Fane).—The variety you refer to is, probably, Denyer's Victoria.

HEATING A CONSERVATORY AT A DISTANCE FROM THE BOILER (Suburban).—There can be no question that there would be a loss of heat in heating a conservatory 20 feet by 11 feet, the connecting pipes having to pass under a walk and lawn of 105 feet before reaching the conservatory. There are many cases in which, however, a distant stovehole and boiler would be desirable; and even the loss of heat would not be anything like so much as is generally supposed if the following things were kept in view:—First, in using, as you propose, 4-inch pipes for the conservatory, we would have cap joints for the flow and return as the pipes enter and leave the house, but the connecting pipes, flow and return, of 105 feet we would make of 1-inch or 1½-bore, as these would take little room, and the circulation of the flow would be quicker. In the second place we would sink the boiler, that for that space of 105 feet there should be a rise to the house of at least from 8 to 12 inches before joining the pipes in the house. Thirdly, we would place these connecting pipes in a close box or drain from 6 to 12 inches below the surface, as it would be better every way that the connecting pipes should be kept dry. A small, close, brick drain would do, or even an earthenware tile drain, large enough to receive both, connecting pipes, and mortared or cemented at the joints. A small wooden box for that length would also answer. Fourthly, as to packing or not packing such connecting pipes, I am a little in doubt. We have packed them with dry sawdust when the pipes, as in your case, were out of doors; and, again, we have left the pipes open in the drain, and the end of the drain opening into the house; and by leaving a small opening with a plug at the end next the boiler, the heat from the connecting pipes was carried by the opening into the house. On the whole, we considered this last plan most effective. The dry sawdust merely prevented the heat escaping. The open mode permitted the heat to reach the house, and thus help. In your case economy will be consulted by the use of small connecting pipes, and they will be more effectual if they are kept dry. With pipes sunk as stated and enclosed, the heat given off will make little or no perceptible appearance on your lawn. We see nothing to prevent you succeeding, and, in our opinion, if carried out as above, there will not be much extra fuel wanted. Still, if a nearer place could be got we would use it for such a small house. For a large house we would not hesitate.

CHANGING POTATO SETS (H. C.).—Every fourth or fifth year we consider it desirable to have a change of seed Potatoes; but if you change the ground repeatedly, and that vary considerably, you will gain little, if anything, by a change of seed, for you obtain the benefit of it annually, though not to such an extent as if you were to have fresh seed from a distance.

PRUNING ABIES OBOVATA (N. Devon).—This is the name of the Fir shoot enclosed to us. It is a pity you should have to prune it on account of its branches encroaching on the walk. We fear the pruning would injure it, as this class of trees needs no more pruning than the removal of the badly-disposed branches. Could you not change the direction of the walk, so as to save the tree from the pruning that appears necessary if the walk remain? If you must prune, cut out the shoots or branches to a fork, and shorten no shoots except to buds. The shoots will only die further back if they be cut so closely as to remove the growing parts or their buds. The beginning of March would be a suitable time to prune it; but we should not prune if it could in any way be avoided.

SCARLET RHODODENDRON (R. F.).—John Waterer, and there are several rosy crimson kinds nearly approaching to scarlet, none we should consider true scarlet.

AMERICAN BLIGHT (J. P.).—Dress the trees with paraffin oil, brushing it well into the crevices. Bare the roots and dress them, as well as the branches and stems, but only the thicker portions of the roots, taking the soil away and replacing with fresh.

PAXTON'S MANURE FOR HYACINTHS (C. B.).—It would be beneficial to the Hyacinths to sprinkle a little on the surface of the pots, and point it in with a piece of wood, just moving the surface; or you may water the plants with it in the same proportions as for guano—i.e., 1 to 2 ozs. to a gallon of water, applied at every alternate watering.

ROSE THROUGH WALL TO CONSERVATORY (C. B.).—Take the shoot through the wall at the end of January, stuffing the space round the shoot with hay or tow. The stem outside ought also to be wrapped with a hayband, and the roots mulched over with about 3 or 4 inches of litter, partially decayed leaves, or other protecting material. We would not cut away more than the weak unripe points of the shoots, unless you wish to start shoots lower than this pruning would give, in which case you must prune at the point whence you wish the shoots to originate.

SEA-KALE STRINGY (E. S. T.).—If your Sea-kale be all like that sent us, it is good for nothing. The causes appear to us to be two—viz., it is very weak, and too long or old. The first is, probably, a consequence of the plants being old, weak, and grown in a soil unsuitable or wanting manure; and the second, allowing the shoots to remain too long before being cut, after they are of a suitable size. The proper size to cut them is when they are from 6 to 9 inches long, and if they are left on the plant until the stems are a foot long the latter are tough and stringy. Yours appear to be in this case; the plants have been slowly forced, the growth has been allowed to become too

long. Had you forced to have shoots fit to cut in from fifteen to twenty or 3 days, we think you would have found them tender and good, though weak. Encourage growth next year with liberal manurings and applications of liquid manure from April to September, dressing with salt in May and July at the rate of one peck to 30 square yards. There is no work specially on the "Gathering and Storing of Apples and Pears," but the subject is treated of in the "Cottage Gardeners' Dictionary" and "Gardener's Assistant."

PRUNING ROSES FOR FORCING (A. A. M.).—The Roses potted last September will be suitable for forcing gently after this month. We should prune the leading shoot, or, as you term it, main stem, back to within six eyes of the present year's growth, and the side shoots to three eyes, but keep in view the ultimate form of the trees, and leave some shoots longer than others, with a view to the formation of a handsome plant.

PLANTING LILIUM LANCIFOLIUM (SPECIOSUM) ROSEUM BULBS (Idem).—It is quite hardy, and succeeds planted out in good rich loamy soil, adding a dressing of well-decomposed manure and some sandy peat, which should be mixed well with the soil. Plant the bulbs about 3 inches below the surface, placing them on and surrounding them with silver sand, and after planting mulch over the spot with an inch thick of partially-decayed leaves or cocconut-fibre refuse. The situation should be open, but sheltered from cold and high winds.

SHRUBS FOR FOWLS' RUN (S. W. G.).—We should plant the four walls at present bare with evergreens, the north aspect with Yew—viz., *Hedera Helix*, *H. digitata*, *H. Regneriana*, *H. canariensis* (hibernical); the east wall with *Cotoneaster microphylla*, *Berberis Darwinii*, *B. stenophylla*, *Crataegus Pyracantha*, *Cerasus Laurocerasus*, and *Ligustrum japonicum*, which may be varied with *Jasminum nudiflorum*, *Viburnum suspensum*, *Cydonia japonica*; west similar to east; and south, *Escallonia macrantha*, *Garrya elliptica*, *Ceanothus azureus*, *C. floribunda*, *Wistaria sinensis*, and *Clematis Jackmanni*. If these are liable to suffer from the fowls before they become established, place some wire netting about 9 inches from the wall all round. After the plants are established the fowls will not interfere with them, or, if they do, only at the lower part of the wall. For the run we should plant common Yew, Hemlock Spruce, and variegated and green Hollies. We know of no plant which fowls are so fond of basking and scratching under as the Portugal Laurel; they also affect *Cupressus Lawsoniana*. Lilies are good, and so are Thorns, pink, scarlet, white, both the single and double. If you do not wish for so many plants for the wall, plant Yew.

WINTER TREATMENT OF CANNAS, &c. (Donna Serafina).—The roots should be stored in sand barely moist, and kept in a cellar or other place safe from frost, potted and placing in heat in March. The cause of the *Escallonia*, pruned last spring, not flowering this summer, was probably all the points of the shoots being cut off. *Gloxinias* may be started from the middle of February to the beginning of March, using a compost of equal parts of light loam and sandy peat, one part leaf soil, and a sixth of silver sand. For growing under the shade of trees the different varieties of Periwinkle are good. *Latania borbonica* should be kept rather dry up to March, then be potted in two parts light loam, and one part each sandy peat and leaf soil, with a sixth of silver sand, watering freely after it begins to grow. Whilst growing it would do better in a house with a higher temperature than a greenhouse. We cannot name plants from a leaf.

PELAGONIUM OBLONGATUM (J. H. B.).—It is a greenhouse perennial. We do not know where it can be purchased. A plant of it flowered this year in the garden of W. Wilson Saunders, Esq., Hillfield, Reigate.

PLANTS FOR ROCKWORK SHADED BY TREES (H. B.).—You object to Ferns, and elect to have flowering plants, which will not do well unless the shade be slight and you can water thoroughly in dry weather. Alpines require as much air and sun as a mountain Daisy. You cannot grow them under trees, yet some of the plants that are put down in catalogues as Alpines, but which belong to woods, copses, and shaded places, will probably succeed. Of such the following are a few:—*Adonis vernalis*; *Ajuga reptans*; *Anemone apennina*, *A. hortensis*, *A. nemorosa plena*, *A. nemorosa rubra plena*, *A. ranunculoides*; *Aquilegia alpina*, *Asperula odorata*, *Asubrietia*, *Azalea procumbens*, *Bellis perennis acubifolia*, *Cardamine trifolia*, *Colchicum alpinum*, *C. autumnale flore-pleno*; *Convallaria majalis*, and varieties gold-striped, pink, and double; *C. rosea*; *Crocus Ancheri*, *C. autumnalis*, *C. biflorus*, *C. nudiflorus*, *C. Sieberi*, *C. marathonicus*; *Cyclamen Coum*, *C. europæum*, *C. hederifolium*, *C. repandum*; *Eranthis hyemalis*; *Galanthus nivalis*, *G. nivalis flore-pleno*, *G. plicatus*; *Festuca glauca*, *Glechoma hederacea foliis variegatis*; *Heliolepis niger*, *H. olympicus*, *H. orientalis*, *H. atrovirens*; *Hepatica angulosa*, *H. triloba*, and vars. blue, white, pink, crimson, purple, double red, and blue; *Hypericum calycinum*, *Meconopsis cambrica*, *Minulus cupressus*, *Myosotis alpicola*; *Narcissus Ajax*, *N. angustifolia*, *N. pseudo-Narcissus*, *N. juncifolius*, *N. poeticus*, and var. *plenus*; *Papaver alpinum*, *P. nudiflorum*; *Pergularia grandiflora*, *Primula acutis*, and double white, lilac, purple, dark crimson, and sulphur varieties; *Pulmonaria angustifolia*, and var. *rubra*; *Scilla amœna*, *S. bifolia*, *S. sibirica*; *Trollius asiaticus*, *T. europæus*, *T. napellifolius*; *Viola calcarata*, *V. biflora*, *V. odorata* in variety, *V. striata*; and *Wahlenbergia hederacea*. *Saxifragas* might do if not too much shaded, but *Sedums* cannot have too much sun.

NAMES OF FRUITS (A. C.).—1, Monsiegnur Affre; 2, Princess Charlotte; 4, Passe Colmar; 5, Thompson's; 7, WhiteDoyenné; 8, Comte de Flandres; 9, Knight's Monarch; 10, Triomphe de Jodoigne; 11, Prince Albert; 12, Easter Beurre.

NAMES OF PLANTS (A. B. C.).—The plant you call a *Lilium* is *Richardia æthiopica*.

POULTRY, BEE, AND PIGEON CHRONICLE.

N.B.—Owing to want of space we are compelled to postpone the Reports of several Shows which we have in type.

NORWICH POULTRY SHOW.

This was held on the 11th inst.

GAME.—*Black-breasted and other Reds.*—Cock or Cockerel.—1, Cup, and Extra, J. Fletcher, Stoneclogh; 2, J. Harris, *hc.* J. Jeken, Eitham; 3, Matthew-Stowmarket. *Hen or Pullet.*—1 and Cup, J. Fletcher; 2, C. F. Barnett, Biggles, *vide*, *whc.* T. Feun, Ipswich. *hc.* H. E. Martin; S. Ma thew. *c.* J. Houghton, Long Stratton; J. Jeken.

GAME.—*Any other variety.*—Cock or Cockerel.—1 and Cup, S. Matthew (Duck-

wing). 2, J. Fletcher (Duckwing). *hc*, J. H. Salter (Duckwing). *Hen or Pullet*—1 and Cup, J. Fletcher (Duckwing). 2, S. Mathew. *COCHIN-CHINA*.—*Cinnamon or Buff*.—*Cock or Cockerel*.—1, Cup, and Extra, Lady Gwydyr, Stoke Park, Ipswich. 2, Henry Lingwood, Baring, Needham Market. *hc*, Henry Lingwood. 3, J. S. Pearson, Great Melton. *Hen or Pullet*.—1 and Cup, Lady Gwydyr. 2, Henry Lingwood. *hc*, J. S. Pearson. *COCHIN-CHINA*.—*Any other variety*.—*Cock or Cockerel*.—1 and Cup, R. S. S. Woodgate, Pembury, Tunbridge Wells (White). 2, Saltmarsh, Chelmsford (Partridge). *Hen or Pullet*.—1, R. S. S. Woodgate (White). 2 and *c*, Major C. E. Bignold, Norway, (Partridge). *Saltmarsh* (Partridge). *BRAMA*.—*Pootra*.—*Dark*.—*Cock or Cockerel*.—1 and Cup, and Extra, Lady Gwydyr. 2, J. A. Pickles, Birkdale, Southport. *c*, E. Pritchard, Tottenhall. *Hen or Pullet*.—1 and Cup, J. Watts, King's Heath, Birmingham. 2, E. Pritchard. *hc*, Hon. Mrs. A. B. Hamilton, Woburn; Col. J. Cockburn, Bracondale, Norwich. *c*, Rev. J. Richardson. *BRAMA*.—*Pootra*.—*Light*.—*Cock or Cockerel*.—1 and Cup, Lady Gwydyr. 2, M. Leno, Markyate Street, *hc*, H. M. Maynard. *Hen or Pullet*.—1 and Cup, Lady Gwydyr. 2, J. H. Butler, Erdington. *c*, P. Haines, Liscard; H. M. Maynard.

DORKINGS.—*Cock or Cockerel*.—1 and Cup, F. Parlett, Great Baddow. 2, J. Webb, Romford. *hc*, Rev. G. Gilbert, Claxton; Mrs. Southwood, Fakenham. *c*, F. C. Hart; Rev. J. G. A. Barker, Biggleswade (3); Major C. E. Bignold (2); R. Woods, jun. *Hen or Pullet*.—1, Cup, and Extra, Rev. E. Bartrum, Great Eppinghampton. 2, Henry Lingwood. *hc*, Rev. T. Cochrane, Stapleford Abbots. 3, R. Wood, jun., Claxton. *hc*, F. Parlett. *hc*, M. Putney, Dorking. *—Southwood*; J. Watts. *c*, R. W. Richardson (2); N. Russell. *SPANISH*.—*Cock or Cockerel*.—1, Cup, and Extra, Nichols Bros., Camberwell. 2, Col. J. Cockburn. *c*, H. Griss, Ipswich; J. F. Sillitoe, Wolverhampton. *Hen or Pullet*.—1 and Cup, F. James, Peckham. 2, J. F. Sillitoe. *hc*, Nichols Bros. *c*, H. Beldon, Gostcock.

HAMBURGERS.—*Gold or Silver-spangled*.—*Cock or Cockerel*.—1, Cup, and Extra, H. Beldon. 2, Duke of Sutherland, Latham. *Hen or Pullet*.—1 and Cup, W. Groom, Ipswich. 2, R. Wilkinson, Guildford. *c*, Rev. T. Tearle, Gazeley Vicarage; Mrs. W. Groom; H. Beldon.

HAMBURGERS.—*Gold or Silver-pencilled*.—*Cock or Cockerel*.—1 and Cup, Duke of Sutherland. 2, J. Walker. *hc*, Rev. G. Skipwith; Duke of Sutherland. *c*, J. F. Ranson, Norwich. *Hen or Pullet*.—1 and Cup, Mrs. Thornhill, Bury St. Edmunds. 2, J. F. Ranson. *hc*, C. Bloodworth, Cheltenham. *c*, W. R. Tickner, Ipswich. *c*, Col. Coleridge; Duke of Sutherland; Rev. T. L. Fellowes; H. Beldon; J. F. Ranson.

ANY OTHER VARIETY.—*Cock or Cockerel*.—1, Cup, and Extra, W. K. Patrick, West Winch, Lynn (Polish). 2, W. Burrows (La Fliche). *hc*, Rev. T. C. Basley (Creve-Coeur); N. Marlor, Denton (Black Hamburg). *hc*, H. Beldon. *c*, Rev. N. J. Ridley, Newbury (Creve-Coeur). *Hen or Pullet*.—1 and Cup, Duke of Sutherland (Black Hamburg). 2, Rev. N. J. Ridley (Malay). *hc*, W. Dring (Creve-Coeur); W. B. Cooch (La Fliche). *hc*, W. K. Patrick (Polish). *c*, O. E. Cresswell, Bagshot (Black Polaris); E. Leech (La Fliche); H. Beldon.

BANTAMS.—*Game*.—*Cock or Cockerel*.—1, Cup, and *hc*, W. Adams. 2, Mrs. H. Tongue. *hc*, R. Youll. *c*, J. S. Pearson; F. Steel. *Hen or Pullet*.—1, Cup, and Extra, W. Adams. 2, G. Todd, Sunderland. *hc*, H. P. Leech, Woolpit.

BANTAMS.—*Any other variety*.—*Cock or Cockerel*.—1 and Cup, M. Leno (Laced). 2, T. E. Thistle, Lowestoft (Black). 2, C. Reed. *Hen or Pullet*.—1 and Cup, M. Leno (Laced). 2, C. Reed (Black).

ANY VARIETY OR BREED.—*Selling price not exceeding \$2 10s*.—*Cock or Cockerel*.—1 and Cup, F. Fisher (Black Red Game). 2, H. Brown, Putney Heath (Spanish). *hc*, C. Bloodworth (Silver Polaris). *hc*, W. A. Burnell (Buff Cochins); W. J. Peace, Driffeld (Buff Cochins). 3, Tindal, Ipswich (Dark Brahma). *c*, Rev. N. J. Ridley (La Fliche); Lady Gwydyr; J. Hinton, Warminster (Malay); W. A. Burnell (Buff Cochins); Col. J. Cockburn (Dark Brahma) and White Cochins; G. F. Tickner, Fakenham (Duckwing Game). *Hen or Pullet*.—1 and Cup, Lady Gwydyr. 2, G. M. Sexton, Ipswich (Brown Game). *hc*, Mrs. Christie, Instow (White Cochins); W. K. Patrick (Polish); Col. J. Cockburn (Dark Brahma). *c*, T. Spurr, Lynn (Dark and Light Brahma); G. M. Sexton (Brown Red Game).

ANY VARIETY OR BREED.—*Selling price not to exceed 25s*.—*Cock or Cockerel*.—1 and Cup, W. J. Peace (Buff Cochins). 2, G. M. Sexton (Brown Red Game). *c*, Rev. E. S. Tildeman, Childerditch Vicarage (Grey Dorking); C. H. Webb, Chelmsford (Duckwing Game); J. H. M. Sexton, Ipswich (Brown Duckwing). (Boudan); Col. J. Cockburn (Dark Brahma); T. Fenn (Brown Red Game); Rev. G. Gilbert (Silver-Grey Dorking). *Hen or Pullet*.—1 and Cup, Lady Gwydyr. 2, A. Page, jun. *hc*, H. Dowsett, Pleshey. *hc*, H. Brown (Spanish); Col. J. Cockburn (Dark Brahma). *c*, W. K. Patrick (Polish); W. Catlack, jun., Littleport (Black Hamburg).

DUCKS.—1 and Cup, Lady Gwydyr. 2, J. N. Waite, Yarmouth. *hc*, Rev. T. Cochrane, Stoke Park; Baker; Rev. J. Richardson; H. Sexton (2). *c*, Rev. G. Gilbert; J. Drake, Ongar.

TURKEYS.—1 and Cup, Mrs. A. Mawhew, Great Baddow. 2, C. Woods, Stowmarket. *c*, F. H. Everett; W. Tippler, Chelmsford.

JUDGES.—Mr. Jones, Fulham; and Mr. J. Douglas.

LEEDS POULTRY SHOW.

THIS excellent Show opened on the 10th inst., and was continued on the following two days. The entries in most classes of poultry were very large, but in Pigeons quite the contrary, and in Rabbits only moderate. In examining the specimens we found great difficulty, as the pens were arranged in double tiers, and in consequence the light thrown upon the birds was a little unequal. For the future we should recommend that the first tier should be placed lower, with only the Bantams and Pigeons on the top. In every other respect we are able to congratulate the Committee upon the arrangements and treatment of the birds while in their hands.

Game mustered 136 entries, and some of the birds were very good. Of single Game cocks all the winners were Brown Reds, the first-prize bird leaving little to be desired. In cockerels also the winners were Brown Reds, and of good quality. Pullets were likewise of fair quality, with the exception of the second-prize Duckwings, which were a little red on the side. Black-breasted Reds were not good in either class, but the Brown Reds superior. Some of the Duckwings were good in colour, notably the first-prize old cock, but there were a few exceptions. *Dorkings* were very good in both classes, Dark Greys being first and third among the adults, and Silvers second. *Spanish* were very poor in most of the classes, the only exception being the first-prize cockerel and also the first-prize pullets, which were pretty good. Messrs. Taylor's grand old pen of Buff *Cochins* won the cup for that variety, and also that for the best pen in the Show. *Brahmas* were good in the old class, but the pullets were only of moderate quality. *Hamburgs* were very good in all classes. The silver cup was awarded to a perfect pen of

Silver-spangled chickens. Of the adult Hamburgs, which were mixed classes, Gold were first and second, and Silvers third; and in Spangled, Golden were both first and second. The young birds were, however, the great feature of the Show both as regards numbers and quality. The first-prize Gold-pencilled pullets were much admired. Silver-pencilled chickens were also good; the three winning pens were such as could not be easily beaten. We did not consider the Golden-spangled pullets equal to the cockerels in that class, the latter being very good. Black Hamburg chickens were very good, perhaps as good as any class in this section, and the winners pretty evenly balanced. *Polands* were a fine display in both classes. In old birds Gold took first, White-crested Black second, and Silvers third; and in chickens Silvers were first and third, and White-crested Black second. Of Game *Bantams* there were many entries, and some of the birds were very good, the first-prize single cockerel being a perfect gem. In *Bantams*, Blacks were very good, but the Whites large and poor.

The quality of the *Pigeons* was high in some of the classes, the Carriers and Pouters standing well in that respect. In the first-named class Blacks won both prizes, and the birds were good in beak and eye-wattle. In Pouters Whites were first and Reds second, the latter being a very handsome pair. In Short-faced Tumblers Almonds were first, Black Mottles second; and in common Tumblers Red Mottles won both prizes. Fantails were very good, the first-prize pair being well shown. The first-prize Barbs were a neat pair of young Black, and the second-prize birds were much older, but not in such good condition. A very pretty pair of Yellow Jacobins were first, and Reds second.

The cup for the best pen of Pigeons in the Show was awarded to a pair of Light Mottled Trampeters of the new-fashioned variety.

Antwerps were very good, and the prizes were awarded to Silver Duns.

In the Lop-eared Rabbits the first-prize went to a Sooty Fawn, and the second to a Blue self colour. Angoras, all White, were very good, as also the Himalayans, and the first-prize Silver-Greys of the right shade of colour. In the Any-other-variety class the first-prize winner was a handsome Grey-and-white Dutch.

Cup for best pen of Pou'try, W. A. Taylor, Manchester.

GAME.—*Cock*.—1, Miss J. A. Aykroyd, Eccleshill. 2, J. A. Aykroyd, Eccleshill. 3, F. Mason, Green Ayre, Lancaster. *Cockerel*.—Cup, T. Mason. 2, T. Dyson, Halifax. 3, V. Payne, Burnley. *Pullet*.—1, T. Mason. 2, J. Pickles. 3, C. C. T. D. Birton, Sheffield.

GAME.—*Black-breasted Reds*.—1, H. M. Julian, Hull. 2, J. Mason. 3, J. Bird, Bingley. *Chickens*.—1, W. Sowerbutts, Nantwich. 2, H. C. Mason, Drighlington. 3, C. T. D. Birton, Sheffield.

GAME.—*Brown-breasted and other Reds*.—1, J. A. Aykroyd. 2, E. Winwood, Worcester. 3, J. Crosland. *Chickens*.—1, J. A. Aykroyd. 2, J. Holmroyd. 3, W. Sowerbutts.

GAME.—*Duckings*.—1, W. J. Mason. 2, W. J. Cope, Barnsley. 3, F. Sales, Crowle, Doncaster. *Chickens*.—1, C. T. D. Birton. 2, J. Mason. 3, W. Fell, Adwalton.

GAME.—*Any other Variety*.—1, R. Turner, Drighlington. 2, R. Butcher, Cresswell. 3, W. J. Mason. *Chickens*.—1, R. Butcher. 2, H. C. Mason. 3, R. Walker, Gomersal.

DORKINGS.—Cup, T. E. Kell, Wetherby. 2, J. White, Warlaby, Northallerton. 3, J. J. Dickinson, Sowerby. *Chickens*.—1, T. E. Kell. 2, Mrs. Arkwright, Sutton Scarsdale. 3, J. White.

SPANISH.—Cup, H. Wilkinson, Earby, Skipton. 2, H. Beldon, Gostcock, Bingley. 3, J. Thresh, Bradford. *Cockerel*.—1, J. Thresh. 2, J. Powell, Bradford. 3, H. Beldon. *Pullet*.—1, J. Powell. 2, J. Thresh. 3, W. & F. Pickard, Thorne.

COCHIN-CHINA.—Cup and 2, W. A. Taylor. 3, H. Tomlinson, Birmingham. *Chickens*.—1 and 2, W. A. Taylor. 3, W. H. Beldon.

BRAMA.—*Pootra*.—1, T. F. Ansell, Cowley Mount, St. Helens. 2, Mrs. Arkwright. 3, H. Beldon. *Cockerel*.—1, Dr. Holmes, Whitecotes. 2, H. Andrews, Eccleshill. 3, T. F. Ansell. *Pullet*.—1, H. Beldon. 2, J. Earnshaw, Hollowgate, Rotherham. 3, Mrs. Arkwright.

HAMBURGERS.—*Gold and Silver-pencilled*.—1, J. Smith, Bingley. 2, J. Walker, Bristwith. 3, H. Beldon. *Gold-pencilled*.—*Chickens*.—1, J. Walker. 2, J. Harker, Shipley. 3, H. Beldon. *Silver-pencilled*.—*Chickens*.—1 and 3, H. Beldon. 2, H. Smith, Keighley.

HAMBURGERS.—*Gold and Silver-spangled*.—1 and 3, H. Beldon. 2, T. Walker, Denton. *Gold-spangled*.—*Chickens*.—1, H. Beldon. 2, J. Robinson, Lindley, Otley. 3, W. Driver, Keighley. *Silver-spangled*.—*Chickens*.—Cup and 2, H. Beldon. 3, J. Robinson.

HAMBURGERS.—*Black*.—1, Stott & Booth, Huntley Brook, Bury. 2, T. Walker, jun. 3, H. Beldon. *Chickens*.—1, T. Walker, jun. 2, H. Beldon. 3, G. Fearnley, Guiseley.

POLANDS.—1 and 3, H. Beldon. 2, T. Dean, Keighley. *Chickens*.—1, J. Bowker, Keighley. 2, H. Sharp, Shelf. 3, H. Beldon.

SELLING CLASS.—1, H. Beldon. 2, T. P. Carver, Langthorpe, Boroughbridge. 3, W. A. Taylor.

GAME BANTAMS.—4, J. A. Brooke, Hunslet. 3, J. Taylor, Dewsbury. *Chickens*.—1, W. Calton, Kirby Lonsdale. 2, S. Smith, Northowram. 3, J. Crosland. *Cock*.—1, C. Noble, Staincliffe, Dewsbury. 2, G. Hall, Kendal. 3, Bellingham & Gill, Burnley.

BANTAMS.—*Black*.—1, H. Beldon. 2, W. A. Taylor. 3, J. Waddington, Guiseley. *White*.—1, Rev. F. Tearle, Gazeley Vicarage, Newmarket. 2, Pickles and Whittaker, Edenfield, Bury. 3, H. Beldon.

BANTAMS.—*Any other Variety*.—1, E. Walt in, Horncliffe, Rawtenstall. 2, H. Sharpe. 3, E. Brown, Sheffield.

DUCKS.—1, E. Leech, Rochdale. 2, H. Crossley, Halifax. 3, F. E. Rawson, Thorpe, Halifax.

GESE.—1, E. Leech. 2, J. White. 3, Lady Hawke, Womersley Park.

DUCKS.—*Aylesbury*.—1, H. Frankland, Church, Lancashire. 2, E. Leech. 3, C. Hout, Rochdale. *Rouen*.—1, R. Gladstone, jun., Liverpool. 2, G. Pounder, Kirby-Moorside. 3, J. White. *Any other Variety*.—1 and 2, W. Binns.

PIGEONS.

CARRIERS.—1, E. Horner, Harewood. 2, J. Thompson, Bingley.

POUTERS.—1 and 2, J. Hawley, Gillingham, Bradford.

TUMBLERS.—*Short-faced*.—1, W. Harvey, Sheffield. 2, E. Horner. *Any other Variety*.—1, J. Hawley. 2, G. Lister, Harewood.

OWLS.—1, J. Fielding, jun. 2, J. Greenwood, Halifax.

FANTAILS.—1, J. F. Loversidge, Newark. 2, T. Rule, Durham.
 BARBS.—1 and 2, E. Horner.
 TURBITS.—1, J. E. Croft, Blyth, Worksop. 2, J. Fielding, jun.
 JACOBS.—1, J. Thompson. 2, W. Harvey.
 TRUMPETERS.—Cup, T. Rule. 2, E. Horner.
 NUNS.—1, E. Horner. 2, W. Croft.
 ANTWERPS.—1, C. J. Copeman, Birmingham. 2, J. Crosland.
 MAGPIES.—1 and 2, J. E. Croft.
 ANY OTHER VARIETY.—1, J. Thompson. 2, H. Waber, Leeds.
 SELLING CLASS.—Silver Medal, J. E. Croft. Bronze Medal, W. C. Dawson, Olney.

RABBITS.

LOP-EARED.—1 and Medal, J. Cranch, St. John's Wood, London. 2, F. Banks, Foulding, London.
 ANGORA.—1, J. F. Farrow, Romford. 2, W. Binns.
 HIMALAYAN.—1, S. G. Hudson, Hull. 2, S. Ball, Bradford.
 SILVER-GREY.—1, S. Ball. 2, A. H. Easton, Hull.
 ANY OTHER VARIETY.—1, J. Boyle, jun., Blackburn. 2, J. E. Piggin, Hinckley.
 SELLING CLASS.—Silver Medal, J. Wharton, York. Bronze Medal, W. Rudd, Bradford.

JUDGES.—Poultry: Mr. R. Teebay, Fulwood, Preston; Mr. W. Cannan, Bradford; Mr. W. R. Lane, Birmingham. Pigeons and Rabbits: Mr. W. P. Tegetmeier, London.

BARRHEAD POULTRY SHOW.

The seventeenth annual Exhibition of poultry was held in the Town Hall, on the 7th inst. This Show has been steadily increasing for a good number of years, and has this year proved a great success both in regard to numbers and quality, all shown being this year's produce. The number of pens exhibited was 179.

SCOTCH.—1, J. Pollock, West Walton, Mearns. 2, W. Thomson, Glasgow. 3, R. Blair, Johnstone. *hc*, R. Clark, Dalsferr.

SPANISH.—1, Special, and 2, A. Walker, Kilmarnock. 3, J. McInnes, Paisley. *hc*, A. Robertson, Kilmarnock.

DORKINGS.—Except White.—1, Special, 2, and *hc*, Z. H. Heys, Barrhead. 3, Mrs. Alston, Hamilton. *c*, W. Good, Airdrie.

GAME.—Black-breasted and other Reds.—1 and Special, W. Martin, Barrhead. 2, J. B. Cochran, Larbert. 3, J. Cochran, jun., Barrhead. *hc*, J. Eason, Craighead. *c*, G. Williamson, Johnstone. *Any other Colour*.—1, Z. H. Heys. 2, A. McKay, Barrhead. 3, J. Macindoe, Barrhead. *hc*, W. Cochran, Barrhead. *c*, J. Pollock, Barrhead.

HAMBURGS.—Golden-spangled.—1 and Special, J. H. Macnab, Barrhead. 2, R. Cunningham, Stewarton. 3, J. Holborne, Stewarton. *hc*, J. Crawford, Beith. Golden-pencilled.—1, R. H. Ashton, Mottram. 2, R. Macnab, Cardonald. 3, R. McNab. *hc*, G. Hamilton, Rutherglen.

HAMBURGS.—Silver-spangled.—1, J. Stewart, Barrhead. 2 and 3, R. Mackie, Stewarton. *hc*, Mrs. Dargachfield, Stewarton. *c*, J. Bruce, Barrhead. Silver-pencilled.—1 and Special, J. Bonland, Kilbarhan. 2, Miss S. S. Lindsay, Glenfeld. 3, J. Lochend, Kilbarhan. *hc*, J. Pollock. *c*, G. Craig, Paisley.

BRAMA POOTRA.—1 and *c*, Mrs. Alston, Hamilton. 2, A. Carswell, Larbert. 3, W. Carswell, Glasgow. *hc*, Miss Brown, Neilston.

COCHINS.—1, T. Holmshaw, Dewsbury. 2, J. Crawford. 3, T. Marshall, Kilmarnock. *hc*, J. Pollock. *c*, J. Drennan, Airdrie.

POLANDS.—Topped.—1, Special, and 2, J. Forsyth, Carmyle. 3, J. Kirkwood, Johnstone. *hc*, J. Johnston. *c*, E. Blair.

ANY OTHER VARIETY.—G. Anderson, Ayrington. 2, J. Fulton, Beith. 3, J. C. Shaw, Craigheads, Barrhead. *hc*, A. McLellan, Barrhead. *c*, W. McClymont, Barrhead.

CROSS BREDS.—1, T. Donnelly, Springhill, 2 and *hc*, J. Pollock. 3, Mrs. Brown, Howood.

BANTAMS.—Game.—1 and Special, W. Stewart. 2, Z. H. Heys. 3, D. Johnson, jun., Dalry. *hc*, J. J. Holborne, *c*, Glen & Walker, Kilmarnock. *Any other Variety*.—1, J. Lambert, Kilmarnock. 2, R. H. Ashton. 3, S. Freeland, Melrose. *hc*, W. Hardie. *c*, A. Robertson.

DUCKS.—Aylesbury.—1, Special, and *hc*, Z. H. Heys. 2, R. Dickie, Alva. 3, A. Robertson. *c*, H. B. Marshall, Airdrie. *Any other Variety*.—1 and 3, A. Robertson. 2, J. H. Macnab. *hc*, W. Wilson, Johnstone. *c*, J. Gilmour.

SELLING CLASS.—1, Z. H. Heys. 2, C. Kane. 3, A. Robertson. *hc*, R. McNab. *c*, J. Robertson.

The Judges were Messrs. Raines, of Stirling, and Paul, of Glasgow.

HYDE POULTRY SHOW.

THIS, the second Hyde Show, was held on the 13th and 14th inst. The entries in both sections were very good.

DORKINGS.—1, E. Leech, Rochdale. 2, I. Stett, Healey, Rochdale. *hc*, W. H. King, Rochdale. N. Russell, Baschurch.

COCHINS.—Buff and Cinnamon.—1 and 2, W. A. Taylor, Manchester. *hc*, T. F. Ansdell, Copley Mount, St. Helens; D. T. Bann, Shrewsbury. *Any other Variety*.—1, T. Stretch (Partridge). 2, K. S. Woodgate, Pembury, Tunbridge Wells (White). *hc*, G. Fletcher, Barlow Moor, Didsbury (Partridge); W. Hill, Heaton Moor, Stockport (Cuckoo).

BRAMA POOTRA.—Dark.—1 and 2, T. F. Ansdell. *hc*, J. Lyon, Prescott; J. Finchett, jun.; K. Hutchinson, Littleborough; E. Ryder, Hyde; T. Barker; G. B. Goodfellow, Hyde; J. T. Tainton; J. Pownall, Middlewich (2).

GAME.—Black-breasted Reds.—1, T. Tomlinson, Fry, Lancashire. 2, W. Warburton, Hyde. Brown-breasted Reds.—1, C. W. Brierley, Middleton. 2, J. Jones. *hc*, A. Haslam, Hindley, Wigan; W. Perrin, Nantwich. *Any other Variety*.—1, C. W. Brierley. 2, J. Healey.

HAMBURGS.—Golden-pencilled.—1, R. H. Ashton, Mottram. 2, J. H. Howe, Denton. *hc*, J. Vane, Lime Handley, Poynton. Silver-pencilled.—1, J. H. Howe. 2, H. Smith, Hyde. *hc*, H. & A. Gill, Rawtenstall.

HAMBURGS.—Black.—1 and 2, T. Walker, jun., Beverley.
 SPANISH.—1, C. W. Brierley. 2, Burch & Boulter, Sheffield.
 GREY-CEY.—1, R. B. Wood. 2, Mrs. J. Cross. *c*, G. Baker, Atherton; W. Ding, G. Coppock, Chester; W. Cutlack, jun., Littleport; E. Smith; J. Walton, Croydon.
 HOUDANS.—1, R. B. Wood, Uttoxeter. 2, W. Cutlack, jun. *c*, J. Pownall.
 POLANDS.—Black.—1, J. Battye. 2, P. Unsworth, Loughton. *Any other Variety*.—1, P. Unsworth. 2, J. Fearnley.
 GAME BANTAMS.—Black-breasted Reds.—1, T. Barker. 2, W. H. Entwistle, Westfield, Bradford. *c*, A. Barton, Haslingden; W. E. Dawson; W. H. Garland, Barrow; A. Smith. *Any other Variety*.—1, W. F. Entwistle (Pile). 2, T. Barker (Brown-breasted Reds); *c*, R. Hartley (Duckings); W. F. Entwistle (Duckwing); E. Siddall (Duckwing); G. Furness (Pile); S. Stephens, jun (Brown-breasted Reds); H. J. Nicholson.
 BANTAMS.—Black or White.—1, R. H. Ashton. 2, W. A. Taylor. *c*, R. H.

Ashton; W. A. Taylor. *Any other Variety*.—1, R. H. Ashton (Silver-laced). 2, H. B. Smith, Broughton, Preston.
 ANY OTHER VARIETY EXCEPT BANTAMS.—1, R. S. S. Woodgate (White Silkies). 2, G. Furness, Rawtenstall (Malays).
 DUCKS.—Aylesbury.—1, E. Leech. 2, T. Tomlinson. *Rouen*.—1, P. West. 2, J. Fearnley. *Any other Variety*.—1 and 2, H. B. Smith.
 GESE.—1, E. Leech.
 TURKEY.—1, E. Leech. 2, W. Hibbert, Godley.
 SELLING CLASS.—Cock.—1, R. Hutchinson (Brahma). 2, C. W. Brierley. *Hens*.—1 and 2, H. Smith (Brahma).

LOCAL CLASSES.

SPANISH.—1, Mrs. Markendale. 2, J. Hazue, Newton.
 GAME.—Cock.—1, W. Warburton. 2, G. Harris. *c*, W. Sutherland, Godley. *Hens*.—1, W. Warburton. 2, T. F. Cooke.

HAMBURGS.—Gold or Silver-spangled.—1, J. Meyers, Denton. 2, J. Wood. *hc*, J. Powell, Haughton. Gold or Silver-pencilled.—1, T. Swindells, Hyde. 2, J. Hill, Broadbottom.

BRAMS OR COCHINS.—1, J. Oldham, Hyde. 2, W. Whittaker, Woodley. *hc*, S. Sowter, Hyde.
 BANTAMS.—1, G. Harris, Matley, Hyde. 2, R. Wharm, Hyde.
 ANY OTHER VARIETY EXCEPT BANTAMS.—*hc*, D. Potts, Hyde (Houdans); J. Lees, Hyde (Manx).
 DUCKS.—1, G. B. Goodfellow. 2, A. Hardley, Hyde. *hc*, W. Warburton.

PIGEONS.

CARRIERS.—Cock.—1, H. Yardley, Birmingham. 2, W. T. Richardson, Lees. *hc*, J. Pearce, Burton-on-Trent; A. Jackson, Chequerbent, Bolton; C. H. Clarke, Scaitton. *c*, J. Ainsworth, Hyde. *Hens*.—1 and 2, A. Jackson. *hc*, C. H. Clarke; E. C. Stretch, Ormskirk. *c*, J. Ainsworth.

POUTERS.—Cock.—Cup, 1, and 2, J. Hawley, Gillington. *hc*, W. T. Richardson; Mrs. S. Ladd. *Hen*.—1, J. Hawley. 2, W. T. Richardson. *hc*, T. W. Townson; Mrs. S. Ladd, Calne; J. Hawley. *c*, Mrs. S. Ladd.

TUMBLERS.—Short-faced.—Almonds.—1, J. Hawley. 2, J. Fielding, jun. *hc*, J. Pearce. *Any other Variety*.—1, J. Fielding, jun., Rochdale. 2, J. Hawley. *hc*, J. Fielding, jun.; D. Newall, Ashton-under-Lyne (Blue Beards); R. White (Yellow Mottles); S. Stephens, jun.; W. Lumb (Black Mottles).

TUMBLERS.—Long-faced.—Balds or Beards.—1, A. Jackson. 2, J. Ainsworth. *hc*, R. White. *Any other Variety*.—1, J. Hawley. 2, T. Newell (Mottled). *hc*, W. A. Hyde. *c*, Mrs. Hunt (White Boated).

RUNTS.—1, W. Taylor, Reddish, Stockport. 2, H. Yardley. *hc*, W. Taylor; A. Jackson.
 VANDER MEERS.—1, P. Furness. 2, T. Newell. *hc*, R. G. Sanders, Leven, Beverley; A. A. Vander Meersch, Tooting (2).

BARBS.—1, J. Fielding, jun.
 FANTAILS.—1, J. F. Loversidge, Newark. 2, T. W. Townson, Bowdon. *c*, E. Lee.
 DRAGOONS.—Blue.—Cup and 1, J. E. Mason, Bradford. 2, W. Howarth, Bury. *Any other Variety*.—1, W. Hill (Yellow). 2, A. W. Wren, Lowestoft (Yellow). *c*, S. Garside, Ashton-under-Lyne (Silver); Mrs. Hunt (White).

ANTWERPS.—Short-faced.—1, J. Mason. 2, A. Justice, Salford. Long-faced.—1, A. Justice. 2, G. B. Goodfellow.
 OWLS.—1, J. Fielding, jun. 2, T. W. Townson.
 ANY OTHER VARIETY.—1, J. Hawley. 2, T. W. Townson (Porcelains).
 SELLING CLASS.—1, R. White, Manchester (Barbs). 2, W. Fletcher, Stone-cloagh. *c*, A. Ashton; W. Taylor (Carriers); J. E. Potts (Blue Owls).

LOCAL CLASSES.

CARRIERS.—Cock.—1, T. Wardie. 2, J. Westwood, Hyde. *Hen*.—1, J. Westwood. 2, K. Wilde.
 DRAGOONS.—1, G. Platt, Newton. 2, C. Warburton. *c*, Mrs. Hunt; J. Ainsworth.

FANTAILS.—1, T. H. Brunt, Hyde. 2, W. J. Warhurst, Mottram.
 TUMBLERS.—1, J. Ainsworth, Hyde. 2 and *c*, W. Smith, jun., Hyde.
 OWLS.—1 and *hc*, W. Bostock. 2, W. B. Coburn, Hyde. *c*, C. Warburton.
 ANY OTHER VARIETY.—1, T. Newell, Ashton-under-Lyne (Ice). 2, J. Lancaster, Godley (Cross between Antwerp and Dragon).

JUDGES.—Poultry: Mr. R. Teebay. Pigeons: Mr. E. Hutton.

REIGATE AGRICULTURAL SOCIETY'S POULTRY SHOW.

THIS was held on the 10th and 11th inst.

DORKING.—1, Ivery & Son. 2 and 3, F. May, Reigate. *Chickens*.—1, G. Ellis, Betchworth. 2, F. May. *hc*, F. May (2); G. Allen, Buckland. *c*, Ivery & Son; J. R. Corbet, Betchworth.

DORKING.—White.—1 and 2, Capt. Moir, Betchworth. *Chickens*.—1, W. B. Waterlow, Redhill. 2, P. Hanbury, Redhill. *hc*, Capt. Moir.

OPEN CLASSES.

DORKING.—Cup, J. Cliff, Dorking. *hc*, Rev. E. Bartram, Berkhamstead; E. Whentley, Ingatstone; E. May, Dorking.

BRAMA OR COCHIN.—1, J. Mew, Redhill. *hc*, W. W. Saunders, Reigate; W. B. Waterlow; J. Allbery, Flanchford; J. Mew.

HAMBURGH.—1, J. Norris, Bletchingley.
 SPANISH.—1, F. May. 2, E. Ritherdon, Reigate.
 GAME.—1, J. Mew. 2, J. Gill, Gatton. *hc*, H. Clutton, Dover. *Chickens*.—1 and 2, P. Hanbury. *hc*, J. Gill.

GAME.—Any Variety.—Cup, J. Jeken, Eltham. *hc*, A. Cosens, Barnham, Arundel; J. H. Salter, Kelvedon.
 GAME BANTAM.—1, P. Hanbury. 2, J. Mew. *hc*, P. Hanbury; H. J. Jones, Reigate.

BANTAM.—Prize, G. G. Stone, Redhill.
 ANY OTHER VARIETY.—Cup, F. James, Peckham Rye.
 TURKEY.—Poult.—1, J. W. Taylor. 2, G. Simpson.
 GESE.—Goslings.—Prize, J. W. Taylor.

DUCKS.—Aylesbury.—1, W. B. Waterlow. 2, Capt. Moir. *Rouen*.—1, G. Simpson. 2 and *hc*, J. R. Corbet. *c*, J. W. Taylor; J. Chandler.
 DUCKS.—Any other Variety.—1, J. Clutton (Black Labrador). 2, W. B. Waterlow (Muscovy). *hc*, P. Hanbury (Wild).

RABBITS.—Longest-eared.—1, R. Trower, jun. 2, J. Ellis. *Black-and-white or Blue-and-white*.—1, J. Ellis. *Grey-and-white or Yellow-and-white*.—1, J. Ellis. *Self-colour*.—1 and 2, P. Hanbury. *Foreign*.—1, J. Ellis. 2 and *hc*, G. Simpson.

ROYAL DUBLIN SOCIETY'S POULTRY SHOW.

THE following prizes were awarded at the winter Show, held from the 10th to the 13th inst.

DORKINGS.—Silver-Grey.—1, S. Mowbray, Killeany, Mountrath. 2, W. G. Mulligan, Springfield, Belfast. 3, J. K. Milner, Blackrock. *c*, G. N. Purdon, Lisnabin, Killnecan; Major J. F. Downman, Bechgrove, Kingsdown. *Chickens*.—1, R. P. Williams, Glaslough, Glontarf. 2, S. Mowbray, Killeany, Mountrath. *c*, W. Mearns, Blessington; Hon. J. Massy, Limerick; L. Stoney, Dublin.

DORKINGS.—Any other colour.—1, G. A. Stephens, Dublin. 2, S. Mowbray. 3, Hon. J. Massy. *Chickens*.—1 and 2, Hon. J. Massy. *hc*, J. Barlow, Chapelizod; Hon. J. Massy; G. A. Stephens.
 SPANISH.—1, S. Mowbray. 2, G. A. Stephens. *Chickens*.—1, and *c* W. G. Mulligan. *hc*, J. Barlow; R. P. Williams.

BRAMA POOTRA.—*Light*.—*Chickens*.—1, Major J. T. Downman. 2, W. G. Mulligan.
BRAMA POOTRA.—*Dark*.—2, L. F. Perrin, Chantill, Loughlinstown. *vhc*, G. A. Stephens. *hc*, T. M. Hilliard. *hc*, R. P. Williams. *c*, Hon. J. Massy.
Chickens.—1, G. A. Stephens. 2 and *hc*, L. F. Perrin. *c*, Hon. J. Massy (2).
COCHIN-CHINA.—*Buff*.—1 and 2, W. H. Perrin. *hc*, D. Sullivan, Blackrock, Dublin. *Chickens*.—1, W. H. Perrin. 2, M. Mahony, Baldoyle. *hc*, W. H. Perrin; G. A. Perrin. *c*, D. Sullivan.
COCHIN-CHINA.—*Partridge*.—1, J. K. Millner. 2, G. A. Stephens. *hc*, L. Stoney. *Chickens*.—1, G. A. Perrin.
COCHIN-CHINA.—*White or Black*.—1, A. Field, Blackrock. *Chickens*.—1 and 2, W. G. Mulligan, Springfield, Belfast.
GAME.—*Black or Brown-breasted*.—1, G. A. Perrin. 2, S. J. Kennedy, Dublin. *Chickens*.—1, G. A. Perrin. 2, S. J. Kennedy.
GAME.—*Any other variety*.—1 and 2, G. A. Perrin. *Chickens*.—1, G. A. Perrin.
HAMBURG.—*Pencilled*.—1, S. Mowbray. 2, L. Stoney. *Chickens*.—1, S. Mowbray. 2, C. Pressley, Chapelizod.
HAMBURG.—*Spangled*.—1, S. Mowbray. *Chickens*.—2, S. Mowbray.
POLISH.—*Gold or Silver*.—1, J. Barlow. 2, R. P. Williams. *c*, Major J. T. Downman.
POLISH.—*Chickens*.—1, R. P. Williams.
LA FLECHE.—1 and 2, G. A. Stephens. *hc*, Major J. T. Downman. *Chickens*.—1 and 2, C. Byrne, Old Dunleary, Monkstown. *c*, G. A. Stephens.
HOUDANS.—1 and 2, G. A. Stephens. *Chickens*.—1, G. A. Stephens.
CREVE-CEUR.—1, G. A. Stephens. *Chickens*.—2, G. A. Stephens.
ANY OTHER VARIETY.—1 and 2, S. Mowbray, Killeary, Mountrath (Black Henburgh and Scotch Grey). *hc*, Miss L. King, Geashill (Blue Spanish). *Chickens*.—1, S. Mowbray (Scotch Grey).
SELLING CLASS.—1, J. K. Millner. 2, G. A. Perrin. 3, Major J. T. Downman (Light Brahma). *hc*, M. Mahony. *c*, S. Mowbray; Hon. J. Massy (Silver-Grey Dorking). *Cocks*.—1, J. K. Millner. 2, G. N. Purdon (Silver-Grey Dorking). 3, R. P. Williams (Spanish). *hc*, J. Barlow (Spanish); J. K. Millner; A. Metge, Sandymount (Silver-Grey Dorking); S. Mowbray (Dorking) (2); Major J. T. Downman (Light Brahma). *c*, L. Stoney (Dark Brahma Pootra); W. M. A. Wright, Baganza, Dalkey.
FOWLS.—*Eat*.—1 and *c*, T. M. Hilliard, Omagh. 2, S. Mowbray. *hc*, R. P. Williams.
BANTAMS.—*Game*.—1, G. A. Stephens. 2, G. Knaggs, Rathmines. *c*, W. G. Mulligan, Belfast. *Any other variety*.—1 and *c*, G. A. Stephens (Black Bantam). 2 and *hc*, Master M. Hilliard, Omagh (Black Bantams).
TURKEYS.—1, A. S. Deane, Newlawn, Oidtown. 2, S. Mowbray. 3, Miss L. King. *Poultries*.—1 and *hc*, Miss L. King. *Cock*.—1, C. M. Dodd, Castlemeate, Clocharn, Drumcondra. 2, S. Mowbray.
GESE.—*Emden*.—1, S. Mowbray. *Toulouse*.—1, R. P. Williams. 2, C. M. Dodd. *hc*, A. Fitzgerald, Blessington Park; Miss T. Daly. *Any other variety*.—1, R. P. Williams. *Eat*.—1, G. A. Perrin. 2, R. P. Williams.
DUCKS.—*Rouen*.—1, W. G. Mulligan, Springfield, Belfast. 2, G. A. Stephens. 3, Major J. T. Downman. *hc*, R. P. Williams (2); S. Mowbray; M. Mahony. *c*, C. M. Dodd. *Any other variety*.—1, S. Mowbray. 2, C. M. Dodd. 3, W. G. Mulligan. *hc*, Hon. J. Massy (3); W. G. Mulligan. *c*, W. Magrath, Blessington.
DEAKES.—*Selling Class*.—1, S. Mowbray. 2, R. P. Williams. 3, W. M. A. Wright. *hc*, Hon. J. Massy. *hc*, Hon. J. Massy; S. Mowbray; M. Mahony.
FANCY, ORNAMENTAL, OR WATER FOWL.—1, 2 and 3, R. P. Williams. *hc*, J. K. Millner.

PIGEONS.

CARRIERS.—1, E. A. Seale, Kilgobbin. 2, F. W. Zurhorst. *Cock*.—Special, F. W. Zurhorst. *hc* and *c*, G. A. Wherland.
POUTERS.—1, F. W. Zurhorst. 2, E. A. Seale. *hc*, E. A. Seale; F. W. Zurhorst.
OWLS.—1, F. W. Zurhorst. 2, J. Dowling.
TUMBLERS.—1, J. Hawley, Bradford. 2 and *hc*, E. A. Seale.
BAERS.—1, J. Dowling. 2 and *hc*, E. A. Seale.
TRUMPETERS.—1, J. Hawley. 2, J. Dowling.
FANTAILS.—1 and 2, E. A. Seale. *hc*, Master Quain. *hc*, E. A. Seale; W. Henry; J. K. Millner.
TURBITS.—1 and 2, E. A. Seale. *hc*, E. A. Seale; J. K. Millner.
JACOBS.—1 and *hc*, R. W. Smith, Cahir. 2, E. A. Seale. *hc*, E. A. Seale (2); R. W. Smith (2); J. Hawley.
NUNS.—1, J. Hawley. 2 and *c*, E. A. Seale. *hc*, J. Dowling.
ANY OTHER VARIETY.—1, J. Dowling (Dragoons). 2 and *hc*, J. K. Millner.
HOMING.—1, F. W. Zurhorst. *hc*, J. K. Millner.
MAGPIES.—1, J. Dowling. 2, L. F. Perrin.
SELLING CLASS.—1, E. A. Seale. 2, J. K. Millner. *hc*, E. A. Seale; J. Dowling; Master Quain (Barbs).
JUDGES.—*Poultry, Pigeons, &c.*: Mr. E. Hutton, Pudsey; Mr. W. G. Merry, Blessington.

BERWICK AND BORDER ORNITHOLOGICAL ASSOCIATION'S SHOW

The third annual Exhibition, was held on the 4th and 5th inst., at the Corn Exchange, Berwick-on-Tweed. There was a good entry of birds, considering the lateness of the season and the weeding-out there has already been of those birds which have failed to make a mark at the numerous shows held throughout the kingdom. There were in all about 243 legitimate entries, exclusive of about fifty birds sent for sale only, and these included most of the best birds in the kingdom. Derby, Norwich, Coventry, Northampton, Leicester, Scarborough, Dewsbury, Penrith, Middlesbrough, Darlington, Sunderland, Bradford, Edinburgh, and many other important towns were well represented, and the Show on the whole was a great success.

Belgians were badly represented, and except the first-prize bird in the Clear-ticked or Yellow class, and the first and second in the Clear-ticked or Marked Buff class, they were only an average lot. Glasgow Dons were fairly represented, and some good specimens shown. Clear Buff and Clear Jonque Norwich were moderately represented, but we fancy that we have seen better birds in previous years, although the winners have been successful throughout the season. The Evenly-marked Norwich classes contained the finest specimens we have ever seen, especially the prizewinners. We liked the second-prize bird in Class 9 better than the first; he has more perfect eye-marks and a better saddle, but both are beautiful specimens. The Unevenly-marked Yellow or Buff Norwich shown in Class 10 had some very highly-coloured representatives, but we preferred the second-prize to the first in this class as well; he is richer in colour and a larger bird. No. 70 is a grand bird. The next class, also for Unevenly-marked Yellow or Buff Norwich, marked on head, eyes, wings, and tail only, was well represented. We were much pleased with No. 75, *v.h.c.*, but the bird was unwell,

otherwise we think it would have been difficult to dispose of; the prizewinners, however, were all grand birds. Clear-crested Norwich was a splendid class. No. 83 (second-prize) is a nice bird, but is spoiled through having his crest slightly broken on each side. No. 86 (first-prize) has a good crest, but it is clear, which we think very objectionable. No. 87A was in bad feather, and is, besides, the possessor of a very moderate crest, and we think was wrongly placed. No. 87 and 85 were, unquestionably, second to nothing either in point of quality or crest; indeed, 85 was, undoubtedly, the best-coloured bird in the class, with a splendid dark crest. Evenly-marked Yellow-crested and Buff-crested Norwich contained very good specimens indeed. No. 89 and 95 were only three-parts moulted, and not at all in show feather. In the class for Any other variety of Crested Norwich, the first-prize bird has the most wonderful crest we ever saw, but is very coarse and deficient in quality; it is a large green-marked bird, nearly all green. All the prizewinners in this class were very deficient in colour. No. 99 and 100 were good birds, full of quality. 102 has a good crest, but is pale in colour and deficient in quality. Clear Yellow and Buff Yorkshire were very moderately represented. Any other variety of Yorkshire was one of the best classes in the Show. We were much pleased with the second and third-prize birds. The first-prize bird has a few dark feathers in his saddle, which is an undoubted blemish. 110 and 111 were two nice birds; in fact, there was not a bad or even a moderate representative in the whole class. The Jonque and Buff Cinnamon classes were poorly represented so far as numbers were concerned, but the quality was unexceptional. Evenly-marked or Variegated Cinnamon contained some beautiful specimens, and we were much impressed with the prizewinners, as also with No. 125, which is a grand bird, but pale in colour; his size and markings were exceedingly good.

Evenly-marked Goldfinch Mules were wonderfully well represented, and contained a grand lot of birds. 132B, second-prize, is a gem, and we should have been disposed to give it first prize. No. 131 (third-prize) is likewise a splendid bird. We were much pleased with Nos. 127, 129, and 132A. 127 was in bad trim; he evidently had been spared the lathering process, that essential requisite to make a bird fit for exhibition in these days of marvels. The whole class, with one or two exceptions, was remarkably good. Unevenly-marked Goldfinch Mules contained three or four splendid birds, the remainder were very commonplace. Dark Goldfinch Mules, and those of any other variety, were fairly represented; the latter class containing two good Brown Linnet Mules. The Selling class contained some grand birds, many of them fit to show in their legitimate classes, and would win at some shows. The prize Goldfinches were good, especially the first and second. They quite distanced anything else in the class.

In the class for Any other variety of British bird there was a good entry. The first prize was awarded to a Thrush, which was pronounced by the Judge to be the finest specimen he ever beheld. It certainly is a magnificent bird, and in splendid plumage. The second prize was awarded to a Chaffinch, and the third to a Bullfinch. Foreign birds only had two representatives—a Bishop Bird and a Parakeet, both nice birds of their kind.

BELGIAN.—Clear Ticked or Marked Yellow.—1 and 2, Slight, Chirnside. 3, W. Headsmith, Berwick.
BELGIAN.—Clear Ticked or Marked Buff.—1, P. Farrel, Berwick. 2, W. Headsmith. 3, Slight.
BELGIAN DOK.—Clear Yellow.—1, R. Forsyth. 2, C. Lugton, Arton. 3, A. Ross, Edinburgh. *hc*, W. Brodie, Edinburgh; Wallace & Beloe, Berwick.
GLASGOW DOK.—Clear Buff.—1, and *hc*, G. Forsyth. 2, C. Lugton. 3, R. Forsyth. *hc*, P. Farrel.
GLASGOW DOK.—Fleeced.—1, Slight. 2, J. Ross. 3, Wallace & Beloe. *hc*, W. Brodie; J. Ross. *hc*, A. Ross; J. Ross.
NORWICH.—Clear Jonque.—1 and *hc*, Adams & Athersuch, Coventry. 2 and 3, S. Bunting, Derby. *hc*, G. J. Barnesby, Derby. *c*, Moore & Wynn, Northampton.
NORWICH.—Clear Buff.—1, 3, and *hc*, S. Bunting. 2, G. J. Barnesby. *hc*, Moore & Wynn.
NORWICH.—Evenly-marked Yellow.—1, H. & D. Audley, Leicester. 2, 3, and *hc*, Adams & Athersuch. *hc*, E. Mills, Sunderland. *c*, Moore & Wynn.
NORWICH.—Evenly-marked Buff.—1 and 2, Adams & Athersuch. 3, H. & D. Audley. *hc*, J. Goode, Leicester. *hc*, J. Devany, Knaresborough. *c*, J. Shield, Berwick.
NORWICH.—Unevenly-marked Yellow or Buff.—1, 3, and *hc*, S. Bunting. 2 and *c*, Adams & Athersuch. *hc*, J. Devany.
NORWICH.—Unevenly-marked Yellow or Buff.—1, 2, and 3, Adams & Athersuch. *hc*, S. Bunting.
NORWICH.—Clear, with Crest.—1, G. Cox, Northampton. 2, J. Devany. 3, Moore & Wynn. *hc*, J. Goode. *hc*, Wallace & Beloe.
NORWICH.—Evenly-marked Yellow, with Crest.—1, G. Cox. 2, Wallace & Beloe. 3, Moore & Wynn.
NORWICH.—Evenly-marked Buff, with Crest.—1, J. Shield. 2, King & Greenwood, Scarborough. 3, J. Goode. *hc*, G. Cox. *hc*, Moore & Wynn.
NORWICH.—Any other Variety of Crested.—1, J. Burrell, Sunderland. 2, G. Cox. 3, J. R. Nisbitt, Berwick. *hc*, King & Greenwood.
YORKSHIRE.—Clear Yellow.—1, J. Cooper, Middlesbrough. 2, L. Belk, Dewsbury. 3, R. Hawman, Middlesbrough. *Clear Buff*.—1 and 3, J. Cleminson, Darlington. 2, L. Belk.
YORKSHIRE.—Any other Variety.—1, L. Belk. 2, J. Stevens, Middlesbrough. 3, G. J. Mackley, Norwich. *hc*, J. Robson, Bedlington. *hc*, J. Spence, South Shields. *c*, J. Cleminson.
CINNAMON.—Jonque.—1 and *hc*, Wallace & Beloe. 2, Moore & Wynn. 3, C. D. Halliburton, Berwick. *hc*, R. Kay, Newark.
CINNAMON.—Buff.—1 and 2, Wallace & Beloe. 3, G. Cox. *c*, Moore & Wynn.
CINNAMON.—Evenly-marked or Variegated.—1, E. Mills. 2, Wallace & Beloe. 3, J. Stephens. *hc*, L. Belk.
GOLDFINCH MULE.—Evenly-marked.—1, J. Cooper. 2, G. J. Mackley. 3, J. Robson. *hc*, E. Mills. *hc*, R. Hawman. *c*, J. Brown, jun., Penrith.

GOLDPENCHE MULE.—*Unevenly-marked.*—1, J. Goode. 2, R. Hawman. 3, Wallace & Beloe. *hc*, M. Burton, Middlesborough.
GOLDPENCHE MULE.—*Dark.*—1, M. Burton. 2 and 3, G. Cox. *hc*, Tenniswood and Jobling, Middlesborough.
MULE.—*Any other variety.*—1, J. Stephens. 2, J. Spence. 3, D. Kay, Bradford. *hc*, T. Robertson, Berwick. *c*, G. J. Barnesby.
SELLING CLASS.—1, G. Cox. 2 and *vhc*, Wallace & Beloe. 3, J. Brown, jun. *hc*, Moore & Wynd.
GOLDPENCHE.—1, T. Robertson, Berwick. 2, J. Goode. 3 and *vhc*, J. Stephens. *hc*, — Slight.
ANY OTHER VARIETY.—1, A. Higgins, Berwick (Thrush). 2, G. Cox (Chaffinch). 3, T. Robertson (Bullfinch).
ANY VARIETY OF FOREIGN BIRD.—1, Wallace & Beloe (Bishop). 2, T. Barnes, Berwick (Parakeet).

DISTRICT CLASSES.

ANY VARIETY.—*Clear or Ticked.*—1 and 2, W. Forsyth. 3, T. Friar, Tweedmouth. *vhc*, J. Geggie. *hc*, W. Headsmith; E. Grey, Berwick. *c*, G. Shaw; T. Hall, Berwick.
ANY VARIETY.—*Evenly-marked.*—1, J. Lamont, Berwick. 2 and 3, J. R. Nisbett *hc*, T. Robertson. *c*, J. Trainer, Berwick.

JUDGE.—Mr. Thomas Clark, of Sunderland.

EDINBURGH CHRISTMAS CLUB POULTRY SHOW.

This was held on the 11th, 12th, and 13th inst. The following extracts are from the *Scotsman*:—

The show of poultry was in every respect a superior one; quite equalling, if not excelling, any previously held in Scotland. That the feeding and breeding of poultry is becoming better understood north of the Tweed, may be gathered from the fact that many of the prizetaking birds at the great English exhibitions have been either not placed or receive minor awards. The *Spanish* section was of great merit. Among the six-and-twenty young cocks, that placed first was a magnificent bird, in fine condition, with nice earlobes and a splendid tail. Mr. Hardie's pullets received the first prize among the young hens, as also the cup for the best pen in the class, and their quality cannot be spoken too highly of. Mr. Somerville secured the palm amongst the old cocks, with a splendid bird having a pure white face, a nice head, and grandly shaped body. The leading award in the old hens went to Mr. W. Paterson for a pen of much beauty. The birds are of great size and bone, nice shape, and excellent in the comb. The *Dorkings* were the largest, and, as many believed, the best section in the Show. There was a grand class of young Coloured Dorking cocks. Mr. Thomas Raines stood in the front rank with a very fine bird, large in size, of grand plumage, and with a fine comb and tail. This bird was awarded the silver cup for the best Dorking in the Show. The young Coloured hens were as a class not above average excellence, although there were several very nice birds amongst the prize pens. There was a small show of old Coloured cocks. Mr. A. Bruce came first with a good ordinary bird with an indifferent tail. Mr. A. Haggart was first with the pair of hens with which he has secured the leading award three years in succession. They are a pair of splendid birds, but begin to exhibit signs of overshooting. Young Silver Dorking cocks were said to be the best class in the Show. There were twenty-seven entries, and Mr. T. Raines was first with a bird which is perfect in head, comb, tail, body, and feet. Upwards of a score competed in the Silver young hen class, in which Mr. J. Turnbull stood first with a strong-boned pen, although not so clear in colour as might be wished. Mr. T. Raines maintained his premier position among the old cocks with a squarely-built bird of great bone and splendid colour. The first prize in the old Silver hen class also went to Mr. Raines for a pair of heavy birds, very clear and decided in colour. This pen has taken silver cups at Manchester, Birmingham, and other English shows. Young *Cochin* cocks were a capital class, as may be gathered from the fact that there were besides the prizes half a dozen high commendations. Mr. Edward Fearon took the lead with a beautifully-coloured Buff cock, perfection in shape. Mr. Fearon, among the young hens, again took the first prize with a splendid pen of pullets of rich buff colour, a quality which was wanting in the second-prize pen. In the old cocks, Mr. Procter carried off the first prize and secretary's medal with a grand White-coloured bird, possessing a beautiful comb, and exquisitely perfect fluff on the feet. Mr. Procter exhibited a pen of old hens which secured the first prize in the class, the cup for the section, and the prize of £5 5s. given by the Club for the best pen of poultry in the yard; they are buff in colour, of perfect shape, immense size, and finely-fluffed feet. The class for young *Brahma Pootras* of any colour was a large and meritorious one. First honours went to Mr. H. Wyse for a bird which might be clearer in colour, but is otherwise a fine specimen of the breed. Mr. Raines came in first in the young hen class with a first-rate pen, one of the birds especially being beautifully pencilled. Several of the old *Brahma* cocks were in poor condition, but they were nevertheless a splendid class. Mr. R. Brownlie came first with a magnificent bird showing good breeding, rich colour, and grand plumage. First honours in the old hen class were claimed by Mr. Raines, who showed a pair of very fine hens, although they were scarcely so well matched as might have been desired. There have been larger and finer shows of *Game* birds. The young cocks were a very moderate class. Mr. D. Harley stood first in

the young Black-breasted hens with the bird which was highly commended at Birmingham. She is a great beauty, with perfection of carriage and feather. In the class of old Black-breasted *Game* cocks, Messrs. J. & A. Blair received the first prize and the cup for the best pen of *Game* in the yard for a very handsomely-shaped bird, but many thought he was faulty in the colour of his breast. The first prize in the old hen class went to a very fair hen, which, however, carried her tail too high. The *Duck-wings* need not be described in detail; on the whole they are of not more than average quality, although the old birds are better than the young ones. In the class of *Game* cocks of any other colour Mr. J. Stark was awarded first prize for a magnificent bird, whose only defect was that he is soft in the feather, a quality which perhaps might have justified the Judges in placing him second to Mr. Harley's equally fine cock, which possessed hard feather. Mr. Harley was first in the old hen class with a beautiful bird, daughter of the hen shown by the same gentleman, which was placed third, and which more than once at previous shows of the Club occupied the leading position. Of *Hamburghs* there was a capital display both in the Spangled and Pencilled classes. Mr. W. A. Hyde, carried off the first prize and the cup for the best *Hamburgh* in the Show with a Golden-spangled cock, whose colour is beautifully bright, while his comb, lobe, and tail are perfect. The hens were of generally even merit. Mrs. Chalmers secured first honours in the cock class with a lovely Golden-pencilled bird. *Bantams* were an interesting section, and mostly of superior quality; and though there were few *Scotch Greys*, these few were very good specimens of this fine old breed. In the class of *Any other Breed* Mr. Alex. McLellan secured the cup with a pen of *Crève-Coeurs*.

Of *Ducks* the show was numerous and excellent, and among the fancy breeds there were many very beautiful birds. It is seldom that one sees such a fine display of *Turkeys* and *Geese*. In this section Mrs. Houldsworth secured the cup for a pen of large *Turkeys*.

SPANISH.—*Cockerels.*—1, J. Gow, Melrose. 2, W. C. Hardie, Carron, Falkirk. 3, J. Bowness. *Pullets.*—1, Cup, and 2, W. C. Hardie. 3, R. Somerville.
SPANISH.—*Cocks.*—1, R. Somerville. 2, Mrs. Gracie, Colinton. 3, J. Bowness.
HENS.—1, W. Paterson, Langholm. 2, P. McIntyre, Castle Douglas. 3, W. Rutherford.
DORKINGS.—*Coloured.*—*Cockerels.*—1 and Cup, T. Raines. 2, J. Turnbull. 3, J. Robb. *Pullets.*—1, D. Draper. 2, D. Gellatly. 3, G. S. Robb.
DORKINGS.—*Coloured.*—*Cocks.*—1, A. Bruce. 2, D. W. Gellatly. 3, A. Haggart. *Hens.*—1, A. Haggart. 2, Mrs. Morrison, Stirling. 3, J. Robb. *c*, D. W. Gellatly.
DORKINGS.—*Silver.*—*Cockerels.*—1, T. Raines. 2, Duke of Buccleuch. 3, Miss Milne, Otterburn, Kelso. *Pullets.*—1, J. Turnbull. 2, Mrs. Ballantine, Dalkeith. 3, Duke of Buccleuch.
DORKINGS.—*Silver.*—*Cocks.*—1, T. Raines. 2, J. Turnbull. 3, Duke of Buccleuch. *Hens.*—1, T. Raines. 2, J. Gibson. 3, W. Christie, jun., Liberton.
COCHINS.—*Cockerels.*—1 and 2, E. Fearon. 3, G. H. Procter. *Pullets.*—1, E. Fearon. 2, A. Burnett, Montrose. 3, E. C. Bruce.
COCHINS.—*Cocks.*—1, G. H. Procter. 2, A. Burnett. 3, E. Fearon. *Hens.*—1, Cup, and prize for best pen in yard, G. H. Procter, Durham. 2, E. Fearon. 3, A. Burnett.
BRABMA POOTRA.—*Cockerels.*—1, H. Wyse, Bishopbriggs. 2, H. White. 3, J. W. Brockbank. *Pullets.*—1, T. Raines. 2, H. White. 3, Miss G. Morrison.
BRABMA POOTRA.—*Cocks.*—1, R. Brownlie. 2, H. White. 3, J. B. Cochrane. *Hens.*—1, T. Raines. 2 and 3, J. Stuart.
GAME.—*Black-breasted and other Reds.*—*Cockerels.*—1, R. Stuart. 2, D. Harley. 3, P. Burt. *Pullets.*—1, D. Harley. 2, J. Anderson. 3, J. Scott.
GAME.—*Black-breasted or other Reds.*—*Cocks.*—1 and Cup, J. & A. Blair. 2, A. S. Brewster. 3, D. Harley. *Hens.*—1, J. Bowness. 2, D. Harley. 3, T. H. Wright.
GAME.—*Any other colour.*—*Cockerels.*—1, J. Fisher. 2, D. Harley. 3, W. Leitch, and Biggar. *Pullets.*—1, J. Stark. 2, D. Harley. 3, J. Hall.
GAME.—*Any other colour.*—*Cocks.*—1, J. Stark, Bedlington. 2, D. Harley. 3, A. S. Brewster. *Hens.*—1 and 3, D. Harley. 2, A. S. Brewster.
HAMBURGHES.—*Spangled.*—*Cocks.*—1 and Cup, W. A. Hyde. 2, Countess of Tankerville. 3, A. Fell. *Hens.*—1, W. Driver. 2 and 3, Countess of Tankerville.
HAMBURGHES.—*Pencilled.*—*Cocks.*—1, Mrs. Chalmers. 2, J. Bowness. 3, J. Ness, Pathhead. *Hens.*—1, F. Logan. 2, J. Ness. 3, Mrs. Chalmers.
GAME BANTAMS.—*Cocks.*—1 and Cup, J. Scott. 2, G. Hall. 3, J. Barlow. *Hens.*—1, R. Brownlie. 2, G. Hall. 3, A. Hutton.
BANTAMS.—*Any other variety.*—*Cocks.*—1 and 2, D. Ainslie. 3, Mrs. Houldsworth. *Hens.*—1, Miss B. P. Frew. 2, Mrs. Houldsworth. 3, R. H. Ashton.
SCOTCH GREYS.—1, W. Gibb. 2, J. Meiklem. 3, Capt. Lyon, Kirkcubright, Dumfries.
ANY OTHER VARIETY.—1, A. McLellan. 2, Mrs. Harvey.
DUCKS.—*Aylesbury.*—1 and Cup, A. Robertson. 2, Lady G. Montgomery. 3, A. Robertson. *Rouen.*—1 and 3, A. Robertson. 2, J. A. Mather. *Any other variety.*—1, G. H. Nicholl. 2, Mrs. Binns. 3, W. Binns.
SELLING CLASS.—*Cocks.*—1, J. Stuart. 2, D. Annan. 3, A. J. Balfour. *Hens.*—1, E. Fearon. 2, D. Annan. 3, Mrs. Harvey.
TURKEYS.—*Norfolk.*—*Young.*—1, H. M. Inglis. 2, Miss Sterhouse. 3, Miss Trotter, Liberton. *Old.*—1, H. M. Inglis. 2 and 3, Lord Kinnaird.
TURKEYS.—*Any other variety.*—*Young.*—1, D. Ainslie. 2, W. H. Thomson. 3, Mrs. Houldsworth. *Old.*—1 and Cup, Mrs. Houldsworth. 2, W. H. Thomson. 3, Mrs. Houldsworth. 2, Duke of Buccleuch. 3, R. Ferrier.
GESE.—1, Lord Kinnaird. 2, Duke of Buccleuch. 3, R. Ferrier.

JUDGES.—Messrs. R. Teebay, Preston, and D. Stratton.

DURHAM PIGEON SHOW.

DECEMBER 11TH & 12TH.

(From a Correspondent.)

I WILL commence with my little favourites, Almond cocks, of which there were eight very fine birds; first prize going to a proper round-headed bird, with fine beak, broad head, good stop, and everything there; the second beating the third in stop, breadth of head, yet not so fine in beak; but beauty of plumage was in the three birds very good indeed. In Almond hens, the first went to a grand coloured bird, yet easily beaten in head properties; one especially, yet not mentioned. Second and third were each good birds, the former beaten nowhere by

the first-prize bird. The Any other class contained a Kite bird, a perfect favourite of the fancy, not only beating ten head and beak birds in every point, but taking the cup over Almonds, Carriers, and Pouters; second going to a very rich Red; and third to the wrong Yellow, which was a little beauty. Carriers were well represented, and the best birds were Duns; first pen being a rare specimen of this breed, and of a structure that is seldom met with, taking the two-guinea medal; the second holding the third in narrowness of skull and condition; both were Blacks. In hens—broad heads being the drawback with several—no fault could be found with the awards, the prizes going to Blacks. Pouter cock class contained all colours, but could not be said to be of any great merit when a White was considered the best, yet the bird, nevertheless, was of good dimensions; but we preferred any of three Blues, or a Red bird, standing second. The first prize in hens fell to a good Blue, which was awarded the one-guinea medal for slender make, length of feather, and leg; Whites taking second and third for the two latter proportions; a good Black, well up in all points, highly commended. Barb cocks were headed by a Red and very broad-skulled bird, winning the cup, and beating Trumpeters and Fans; second, a fine-proportioned bird, yet not so broad in skull as the third-prize bird. The hens had a greater mixture of colour, but we were sorry the first could not be given to a better bird; second to a Red, a pretty fair bird as a hen. Trumpeter classes being small, need no comment, as exhibitors will not enter against those foreign birds, Black taking the two-guinea medal. The Fantails well displayed their propensities, and in large numbers; none could be found to beat the first-prize pen, which took the one-guinea medal, considering all points, the bird having plenty of motion, with a good flat tail, of which the second was wanting; the third possessed that property, yet out of condition in tail. The whole a grand class. Any other colour of Fantail also in good numbers. Flatness of tail was there in extreme, yet wanting in style; first and second-prize pens need changing to be correct. In Jacobins, Red or Yellow, the first and cup in section won by a Red of nice soft and silky plumage, and a fair good hood and chain; second pen was less, and nothing behind in any point; third going to a good little Yellow, that was almost beaten by another of the same colour. The Any other class contained chiefly Blacks, first bird good in colour, but not the best in chain and hood; a very fine White second; and Blue, the greatest novelty in Jacks, third. Turbits, Blue and Silver, contained many good little specimens, some with fine frills and good in colour, others with good points and short beaks, first and second being Blue and third Silver, the first taking the one-guinea medal. Any other had a good mixture of colour, first being Red and second Black, the latter so good in all points that it ought to have stood first; a very good Yellow taking third, and several exceedingly good birds highly commended. Foreign Owls proved first-class, a White winning the two-guinea medal; the second, a grand-headed little Black, having the proper Owl-like appearance. Blue, third, and many good birds commended. English Owls were also a good class, a Silver taking the two-guinea medal and well deserving; really good Blue second and third. In Dragons, Blue or Silver, the best birds by no means won, a Silver was much to be preferred to the Blues that won. Any other Dragons, Yellow proved superior to Reds and Whites, taking all the prizes and winning the three-guinea cup. The English variety contained some good Magpies and Nuns. The foreign variety had some rare specimens of the unknown, the first taking the one-guinea medal. The Selling classes were well filled with a lot of very cheap birds. The locked pens were much admired by all.

TUMBLERS (Almonds).—Cocks.—1 and 3, R. Fulton, Brockley Road, London. 2, H. Adams, Beverley. **Hens.**—1, J. Fielding, jun. Rochdale. 2 and 3, R. Fulton. **Any other Variety.**—Cup and *hc*, W. R. & H. O. Blenkinsop, Newcastle-on-Tyne. 2, H. Adams. 3, K. Fulton. *c*, R. Cant, Brompton; W. R. & H. O. Blenkinsop.

CARRIERS (Any colour).—Cocks.—Medal and 3, R. Fulton. 2, A. Billyeald Nottingham. **Hens.**—1 and 2, R. Fulton. 3, E. C. Stretch, Ormskirk, *c*, J. and W. Towerson.

POUTERS (Any colour).—Cocks.—1, W. Ridley, Hexham. 2, R. Fulton. 3, E. T. Dew, Weston-super-Mare. *c*, Mrs. Ladd, Calne (2); Rev. C. C. Ewbank, Biggleswade. **Hens.**—Medal and 2, R. Fulton. 3, Mrs. Ladd. *hc*, E. T. Dew; Rev. C. C. Ewbank.

BARBS.—Cocks.—Cup and 2, R. Fulton. 3, H. Yardley, Birmingham. *hc*, J. Fielding, jun. *c*, C. G. Cave, Spalding. **Hens.**—1, J. Stanley, Blackburn. 2 and 3, R. Fulton. *hc*, J. H. Ivimey, Long Sutton. *c*, F. Smith.

TRUMPETERS.—Notified.—1 and 2, R. Fulton. 3, J. & W. Towerson, Egremont. **Any other variety.**—Medal and 2, R. Fulton. 3, W. H. C. Oates, Newark. *c*, J. and W. Towerson.

FANTAILS.—White.—Medal and 3, W. Brydone, Dunse. 2, J. Walker. *c*, J. Walker; J. Galt, Kilbirnie. **Any other colour.**—1, W. Brydone. 2 and 3, H. Yardley.

JACOBIANS.—Red or Yellow.—Cup and 3, J. Thompson, Bingley. 2, G. South, New Bond Street, London. *hc*, W. R. & H. O. Blenkinsop. *c*, T. W. Swallow, Northampton; H. F. Nalder. **Any other colour.**—1, H. F. Nalder, Croydon. 2, T. W. Kilburn, Bishop Auckland. 3, J. Thompson. *c*, H. F. Nalder; R. Fulton.

TURBITS.—Blue or Silver.—Medal, A. Brown. 2, J. Fielding. 3, P. H. Jones. *c*, T. Gallon, High Felling, Gateshead; R. Fulton; R. Youll. **Any other colour.**—1 and Extra 3, J. G. Orr, Beith. 2, R. Fulton. 3, A. A. Vandermeersch, Tooting. *c*, H. F. Nalder; W. Croft.

OWLS.—Foreign.—Medal and 3, R. Fulton. 2, A. Billyeald. *c*, J. Fielding (?); W. R. & H. O. Blenkinsop; H. A. Saddington; P. H. Jones; S. Holroyd, Oldham; T. W. Townson. **English.**—Medal and 2, W. Gamon, Chester. 3, J. Chadwick, Bolton. *c*, R. & J. Anderson, Newcastle; J. Chadwick; H. A. Saddington, Northampton; A. Justice; T. W. Townson.

DRAGONS.—Blue and Silver.—1, R. Fulton. 2, S. Holroyd. 3, H. Yardley. *c*, J. Ashworth; W. Setton, Blackburn (3); J. Watts, King's Heath, Birmingham; J. Philpotts, Clapham; W. Reddihough, Kelbrook, Calne; W. Gamon; F. Graham. **Any other Colour.**—Cup, R. Fulton. 2, S. C. Betty, Camden Town. 3, J. Ashworth. *c*, A. Jackson; W. Binns, Pudsey; J. Stanley; F. Graham, Birkenhead; S. C. Betty, Camden Town; J. Ashworth.

ANY OTHER VARIETY.—English.—1, R. Fulton. 2, W. C. Dawson, Otley (Swallow). 3, J. Watts. *c*, W. C. Dawson (Magpie); M. Ord, Durham (Magpie); J. Watts; J. G. Dunn; W. Gamon (2); P. H. Jones (Magpie); A. A. Vandermeersch. **Foreign.**—Medal, W. C. Dawson (Ice). 2, M. Ord. 3, T. Imrie, Ayr. *c*, J. & W. Towerson; T. W. Kilburn (2); A. A. Vandermeersch.

SELLING CLASS.—Single.—1, W. R. & H. O. Blenkinsop. 2, H. Adams. 3, J. Guthrie, Hexham. *c*, J. C. Renwick, Gale, Littleborough; J. Watts; A. Frame, Motherwell; W. Brydone (Tumbler). **Pair.**—1, J. Grant, Edinburgh. 2, H. Adams. 3, W. R. & H. O. Blenkinsop. *c*, R. G. Sanders, Leven, Beverley (Jacobins); R. & G. Anderson; J. Elgar, Osmanthorpe Hall (German Tumblers); J. Guthrie; A. Frame (2); H. Adams; G. T. Whitehouse, King's Heath, Birmingham; H. F. Nalder.

JUDGES.—Mr. E. L. Corker, Mr. G. Fletcher, Mr. G. Fawdin.

WEST HERTS AGRICULTURAL SOCIETY'S SHOW.

THIS Society's seventh annual Exhibition was held at Watford on the 9th and 10th inst. Appended is the prize list, and we hope next week to publish a report of the several classes.

DORKINGS.—Coloured.—1 and 2, Rev. E. Bartrum, Great Berkhamstead. *hc*, Rev. E. Bartrum; J. H. Barnes, Watford (2); Lord Chesham; J. H. James. *c*, A. Heseltine, Stanmore. **White.**—2, Lord Ebury.

Plate for best pen of Dorkings.—Rev. E. Bartrum.

COCHINS.—Partridge.—1 and 2, C. A. Barnes. **Any other Variety.**—1 and 2, C. A. Barnes. *hc*, T. Clutterbuck, Rickmansworth.

Plate for best pen of Cochins.—C. A. Barnes.

BRAHMA-POOTRA.—Dark.—1 and 2, R. B. Day, Rickmansworth. 2, C. A. Barnes. *hc*, C. A. Barnes; R. B. Day. *c*, R. B. Day. **Light.**—1, Lord Chesham. 2, R. H. Hall.

GAME.—1, C. A. Barnes. 2 and *hc*, T. Paramor, Aldenham.

HAMBURGH.—1, A. J. Copeland. 2, J. E. Littleboy, Hunton Bridge. *hc*, Rev. R. L. James, Watford (2). *c*, T. Clutterbuck; W. J. Lloyd.

BANTAMS.—Game.—1, J. H. Barnes, Watford. 2, C. A. Barnes. *hc*, J. M. Hughes, Bucks. **Any other Variety.**—1, W. J. Lloyd. 2, C. A. Barnes.

Plate for best pen of Game Bantams.—J. H. Barnes.

CREVE COEURS AND HOUDANS.—1, C. A. Barnes. 2 and *hc*, J. White, Chorley, Wood, Rickmansworth.

ANY OTHER VARIETY.—1, C. A. Barnes. 2, T. Clutterbuck. *hc*, J. H. Barnes; C. A. Barnes. *c*, J. H. Barnes.

SELLING CLASS.—1, A. Heseltine. 2, Lord Ebury. *hc*, A. Heseltine (2); J. H. James; Rev. E. Bartrum (2); J. H. Barnes. *c*, J. E. Littleboy; C. Snewing, Holywell, Watford.

DUCKS.—Aylesbury.—1, T. Kingsley, Tring. 2, Lord Chesham. *hc*, J. H. Barnes. 3, T. Kingsley. **Rouen.**—1 and 2, C. A. Barnes. *hc*, T. Clutterbuck; J. E. Littleboy. **East Indian.**—1, Countess of Essex. 2, C. A. Barnes. **Any other Variety.**—1, T. Clutterbuck.

Plate for best pen of Ducks.—T. Kingsley.

GEESSE.—1, J. H. Barnes. 2, T. Kingsley. *hc*, C. A. Barnes; Lord Chesham; *c*, C. A. Barnes.

Plate for best pen of Geese.—J. H. Barnes.

TURKEYS.—1, J. H. Barnes. 2, W. J. Lloyd. *hc*, J. H. Barnes; Lord Chesham; A. Heseltine; T. Paramor. *c*, A. Barnes; R. Blackwell.

Plate for best pen of Turkeys.—J. H. Barnes.

JUDGES.—Mr. E. Smith, Orrels Farm, Timperley; Mr. J. Bailly, Mount Street London.

BURTON-UPON-TRENT POULTRY SHOW.

THE fourth annual Exhibition of Canaries and other fancy cage birds, poultry, &c., took place in the Town Hall on the 8th and 10th inst., and was successful both as regards attendance and the number, variety, and value of the birds exhibited. Altogether there were about 130 entries of Canaries and fancy cage birds, and about one hundred pens of poultry. The specimens in each of the classes were considered to be of high merit, especially the Game, Hamburgs, and Bantams, to which additional prizes were given; and the Judge made a special remark in the prize catalogue that the mixed class of poultry was meritorious. The Parrots were particularly noticed, and a White Cockatoo, sent by G. H. Allsopp, Esq., was one of the chief attractions in that department. The patrons of the Society highly complimented the Committee of Management upon the excellence of the Show.

BRAHMS.—1, E. Pritchard, Tettenhall. 2, J. Freeman, West Bromwich. 3, A. O. Worthington, Burton. *hc*, J. Walker, Newcastle; H. Chawner, jun. Uttoxeter.

GAME.—1, Mrs. Allsopp, Hindlip Hall. 2, J. Hood, Tettenhall. 3, J. Lane, jun. Burton. 4, W. S. Mathews, Bretby Park. *c*, E. Clavey; J. Tyler, jun., Loughborough; W. Garratt, Burton.

HAMBURGS.—1, G. J. Mitchell. 2, E. Bell. 3, J. Freeman, West Bromwich. 4, C. Daws. *hc*, W. Cutlack, jun., Littleport; Boot & Sinclair, Horninglow. *c*, J. Freeman.

BANTAMS.—1, E. Bell. 2, F. Thomas, Burton. 3, C. H. Kite, Nottingham.

ANY OTHER VARIETY.—1, J. Tyler, jun. (Dorkings). 2 and 3, Mrs. Allsopp (Spanish and Cochins).

CROSS BREED.—1, W. Cutlack. 2, E. J. Draper, Winshall.

CAGE BIRDS.

BELGIANS.—Buff or Yellow Clear.—1, T. Newbold. 2, R. Heath. *Buff or Yellow-marked.*—1, T. Newbold. 2, R. Heath.

NORWICH.—Clear Yellow.—1, J. Mann. 2, R. Heath. 3, J. Dent. *hc*, R. Cowley. *Clear Buff.*—1, J. Mann. 2, T. Newbold. 3, R. Heath. *hc*, W. Gretton.

NORWICH.—Marked Yellow.—1, J. Mann. 2, J. Dent. 3, T. Newbold. *Mark Buff.*—1, J. Dent. 2, T. Bider. 3, W. Port.

NORWICH.—Variegated Yellow.—1, R. Heath. 2, T. Newbold. 3, R. Cowley. *Variegated Buff.*—1, R. Cowley. 2, J. Mann. 3, A. Curtis, Burton.

NORWICH.—Green Yellow.—1, T. Newbold. 2, J. Mann. 3, W. Jackson. *Crested Buff.*—1, J. Dent. 2, W. Holmes. 3, J. Mann. *hc*, A. Curtis.

CINNAMONS.—Buff.—1, A. Curtis. 2, W. Gretton.

MULES.—Dark.—1, A. Curtis. 2, W. Port.

GO-DEINCHES.—1, R. Heath. 2, A. Curtis. 3, J. Dent.

REDPOLES.—1, A. Curtis. 2, J. Dent.
PARROTS.—*Grey*.—1, T. Pegg, Burton. 2, G. H. Allsopp, Burton. *hc*, J. Chiswell, Burton. *c*, S. Haines, Burton; H. Freer, Burton.

YOUNG CAGE BIRDS.

BELGIANS.—*Marked Yellow*.—1, T. Newbold, Burton.
NORWICH.—*Clear Yellow*.—1, J. Mann, Burton. 2, W. Port, Burton. 3, R. Cowley, Burton. *hc*, W. Grettton. *c*, T. Newbold. *Clear Buff*.—1, J. Mann. 2, W. Grettton, Norwich. 3, T. Newbold. *hc*, T. Keeling, Burton.
NORWICH.—*Marked Yellow*.—1, J. Mann. 2, W. Grettton. 3, T. Keeling. *hc*, T. Newbold. *Marked Buff*.—1, J. Mann. 2, R. Cowley, 3, J. Dent, Burton. *hc*, R. Heath, Burton. *c*, W. Grettton; T. Bidder, Burton.
NORWICH.—*Variegated Yellow*.—1, T. Newbold. 2, J. Mann. 3, W. Grettton. *hc*, R. Cowley. *Variegated Buff*.—1, T. Bidder. 2, J. Mann. 3, T. Newbold. *hc*, W. Grettton. *c*, R. Cowley; J. Dent.
NORWICH.—*Green Yellow*.—1, W. Grettton.
NORWICH.—*Crested Yellow*.—1, R. Cowley. 2, W. Port. 3, J. Mann. *hc*, J. Dent. *Crested Buff*.—1, J. Mann. 2, W. Holmes. 3, W. Port. *c*, R. Cowley.
CINNAMON.—*Buff*.—1, J. Mann.
LIZARDS.—*Golden-spangled*.—1, J. Mann. 2, J. Dent. 3, T. Newbold. *Silver-spangled*.—1, J. Mann. 2, J. Dent. 3, T. Newbold.
GOLDFINCH MOLES.—*Mealy*.—1, A. Curtis. 2, J. Dent. 3, W. Grettton.
JUDGES.—*Poultry*: Mr. E. Lowe, Comberford. *Birds*: Mr. J. G. Barnesby, Derby.

CHELTENHAM CANARY SHOW.

This was held in the Corn Exchange on the 10th and 11th inst. The following is the prize list:—

NORWICH.—*Clear Yellow*.—1, W. J. Doyle, Nottingham. 2 and 3, J. W. Lamplough. *hc*, Adams & Athersuch, Coventry (2); W. Walter, Winchester (3). *c*, Adams & Athersuch; J. W. W. Fantrass, Canterbury; G. & J. Mackley, Norwich; Moore & Wynn, Northampton.
NORWICH.—*Clear Buff*.—1, 2, and 3, Adams & Athersuch. *hc*, J. W. Lamplough; W. Walter; W. J. Doyle; G. & J. Mackley; Prosser & Wood, Derby; Moore & Wynn. *c*, J. W. Lamplough; W. Walter; W. Lee, Coventry (2); S. Bunting (2).
NORWICH.—*Evenly-marked Yellow*.—1, 2, and 3, Adams & Athersuch. *hc*, W. Walter; Moore & Wynn. *c*, G. & J. Mackley.
NORWICH.—*Evenly-marked Buff*.—1, 2, and 3, Adams & Athersuch. *hc*, W. Walter; J. Devany, Knarborough; G. & J. Mackley. *c*, S. Bunting; Mrs. Stephenson, Cheltenham.
NORWICH.—*Ticked and Unevenly-marked Yellow*.—1, Adams & Athersuch. 2, S. Bunting. 3, G. & J. Mackley. *hc*, Adams & Athersuch; J. C. Clark, Derby; W. Walter; J. Devany; S. Over, Coventry; Prosser & Wood. *c*, W. Walter; W. J. Doyle; G. & J. Mackley; Moore & Wynn; S. Bunting.
NORWICH.—*Ticked and Unevenly-marked Buff*.—1, G. & J. Mackley. 2, Adams & Athersuch. 3, S. Bunting. *hc*, Adams & Athersuch; J. C. Clark; S. Over (2); S. Bunting; G. & J. Mackley. *c*, W. Walter; W. Lee; Ellerton & Mounsey, Darlington; Moore & Wynn; Adams & Athersuch.
NORWICH.—*Crested Yellow*.—1 and 3, Adams & Athersuch. 2, Moore & Wynn. *hc*, G. & J. Mackley. *c*, G. Cox, Northampton.
NORWICH.—*Crested Buff*.—1, W. Walter. 2, G. & J. Mackley. 3, J. Goode, Birstone Gate, Chester. *hc*, H. Gibbs, South Brent; J. Devany; G. & J. Mackley. *c*, W. J. Doyle.
BELGIAN.—*Clear and Ticked Yellow*.—1, 2, and 3, J. Rutter, Sunderland. *hc*, S. Bunting; J. N. Harrison, Belper; J. Rutter; P. Rawnsley. *c*, H. Gibbs (2); T. Dove.
BELGIAN.—*Clear and Ticked Buff*.—1, J. N. Harrison. 2 and *hc*, J. Rutter. 3, S. Bunting. *c*, H. Wootton, Aylesbury; T. Dove; P. Rawnsley.
LIZARD.—*Golden-spangled*.—1 and 3, J. Taylor, Middlesborough. 2, J. Martin.
LIZARD.—*Silver-spangled*.—1, J. N. Harrison. 2, R. Ritchie. 3, P. Rawnsley. *hc*, J. Martin; W. J. Doyle; J. Taylor; G. & J. Mackley; R. Ritchie. *c*, W. Richards, Bulwell, Nottingham; T. W. W. Fantrass.
CINNAMON.—*Yellow*.—1, W. Watson, jun. 2, J. N. Harrison. 3, J. W. Lamplough. *hc*, J. W. Lamplough; J. Waller, Emsbury, London; R. Hawman; J. Taylor; Moore & Wynn. *c*, J. Pear; J. Waller.
CINNAMON.—*Buff*.—1, J. Waller. 2, J. W. Lamplough. 3, J. Tear, Northampton. *hc*, J. Taylor; J. N. Harrison. *c*, G. Cox; Moore & Wynn.
YORKSHIRE.—*Clear*.—1, and *c*, P. Rawnsley. 2 and 3, T. Fausett, *hc*, H. M. Cooper, Middlesborough; T. Fausett (2); J. Whitaker, Great Horton.
YORKSHIRE.—*Variegated*.—1 and 2, P. Rawnsley. 3, J. Brown, jun., Penrith. *hc*, J. Brown, jun.; J. Taylor; G. & J. Mackley; P. Rawnsley.
ANY OTHER VARIETY.—1, J. Rutter. 2, J. N. Harrison. *hc*, J. Martin (2); Stevens & Burton; J. Taylor; J. Rutter; P. Rawnsley. *c*, R. J. Troake, Clifton (Pied Buff); J. Brown, jun.; Moore & Wynn; P. Rawnsley.

MULES.

GOLDFINCH AND CANARY.—*Variegated Yellow*.—1, R. Hawman. 2, H. Ashton, Prestwich. 3, J. Goode. *hc*, E. Stansfield, Bradford; H. Ashton (2); J. Brown, jun. *c*, J. Baxter, Newcastle-on-Tyne; B. Lancaster, Leeds.
GOLDFINCH AND CANARY.—*Variegated Buff*.—1, G. & J. Mackley. 2 and 3, J. Baxter. *hc*, H. Ashton; E. W. Lulham, Brighton; Stevens & Burton, Middlesborough (2); J. Brown, jun. *c*, H. Ashton; E. W. Lulham.
GOLDFINCH AND CANARY.—*Dark*.—1 and 2, E. Stansfield. 3, G. & J. Mackley. *hc*, Stevens & Burton; J. Baxter. *c*, Moore & Wynn; G. Cox.
ANY OTHER VARIETY.—1, H. Ashton. 2, E. Stansfield. 3, Stevens and Burton. *hc*, H. Ashton; B. Lancaster (2). *c*, H. Ashton (2); Stevens and Burton.

BRITISH BIRDS.

GOLDFINCH.—1, J. Baxter. 2, J. Goode. 3, J. N. Harrison. *hc*, J. W. Lamplough; Stevens & Burton; Ellerton & Mounsey. *c*, H. Pigeon, Redland, Bristol.
LINNETS.—1, W. Carrick, Middlesborough. 2, T. Tenneswood, North Aclam. 3, J. N. Harrison. *hc*, W. Carrick; R. Hawman, Middlesborough; S. Bunting.
ANY OTHER VARIETY.—1, W. Haines, Cheltenham (Hawfinch). 2, J. Brown, jun. (Bullfinch). 3, Mrs. Moore, Cheltenham (Doves). *hc*, R. J. Troake (Siskin); Ellerton & Mounsey (Bullfinch); S. Bunting (Bullfinch). *c*, — Clare (Siskin); G. & J. Mackley (Bullfinch).

FOREIGN BIRDS.

PARROTS.—1, Mrs. Drayton, Cheltenham. 2, Miss Cannon. 3, S. Bunting. *hc*, W. Walter.
COCKATOOS.—1, Mrs. Drayton.
PARAKEETS.—1, Mrs. Drayton. 2, J. Bloodworth. 3, W. Walter. *hc*, J. Martin.
ANY OTHER VARIETY.—1, 2, 3, and *hc*, W. Walter.
SPELLING CLASS.—1 and 3, G. & J. Mackley. 2, Mrs. Stephenson. *hc*, W. Walter; J. Devany (2); G. & J. Mackley (2); J. Goode; Mrs. Stephenson (6); *c*, Mrs. Stephenson (4).

A CLEAR Yellow Norwich bird, No. 16, exhibited by Mr. S. Bunting, Woodlark, Bridge Street, Derby; and also a Variegated Buff Norwich, No. 53, shown by Mr. Richards, Guernsey Buildings, Bulwell, near Nottingham, having been found to be artificially coloured, these exhibitors forfeit all entrance fees and prizes, and will not be allowed to exhibit at future Shows of this Society, for such period as the Committee may determine. Also

a Golden-spangled Lizard, No. 156, shown by Mr. W. Watson, jun., South Arden Street, Darlington, being proved to have been clipped in the cap; and a Silver-spangled Lizard, No. 163, shown by Mr. Robert Ritchie, 75, New Park Street, Darlington, being proved to have been plucked in the cap—these exhibitors also pay the same penalty.—HENRY COCHRANE, *Hon. Sec.*, Cheltenham.

LIGHT BRAHMAS AT THE CRYSTAL PALACE AND BIRMINGHAM.

I wish to say a few words on the only breed—Light Brahmas, which I can at all claim to understand, as exemplified in the classes shown at the Crystal Palace and Birmingham. Being really anxious to look up to the decisions of the Judges as, if not infallible, at any rate pointing out to me the right road, it is with real sorrow that I find myself totally unable to reconcile many of the awards at these Shows with the standard of points required by the authorities (especially by Mr. Wright), who have written on the breed in question.

First as to the striped hackle both of neck and saddle in the cocks and cockerels. After the experience of this winter, supposing the Judges to be right, I hope Mr. Wright will see fit in his forthcoming number to say that this very beautiful feature can no longer be considered an essential point. Many noticed and prize birds, especially at the Crystal Palace, were almost white; in fact it appeared to me that, provided a bird were fair in shape and had plenty of leg-feather, the presence or absence of marking on neck or saddle was perfectly immaterial. At Birmingham No. 809, which ought undoubtedly to have been placed among the first three cockerels, was not even noticed. Amongst hens and pullets what has become of the pure white which, we were told last year, was so all-important? Cases were not wanting in these classes where noticed birds might have had Buff Cochins for their not very remote ancestors; while at the Crystal Palace the two best pullets in the whole Show—the best, that is, by all the rules of judging to which I have been accustomed—viz., Nos. 792 and 793, were absolutely passed over without notice of any kind. I believe, however, unless I am much mistaken, that this very pair had their revenge by taking the first prize at Birmingham, where their enormous superiority over all competitors was so marked as to make the bewildered amateur shake a very puzzled head over the inconsistencies of judging at the two Shows, and to wonder what type of bird he ought to try to breed for next year. Who is to decide when judges disagree? Would it be too much to expect from human nature that if there really have been mistakes in the judging (and I really do not see how we can escape from the conclusion that the late decisions have been so conflicting as to make these Shows of no value at all as a future guide), Mr. Wright or some other competent person might be authorised by the Judges to say so? I must confess that my own opinion of their future value as Judges would be greatly enhanced by their so doing.

After a careful comparison of my notes of both Shows I find that the Judges seem to be of one mind in demanding ample leg-feather—a fact which I think breeders will do well to bear in mind. The sloping back, so strongly condemned by Mr. Wright in "The Brahma Fowl," appears to be of no consequence in the eyes of the Judges; and the white edging to the tail feathers of the cock, enlorged in the same work, seems to be placed in the same category as dark-striped hackle—i.e., of no moment at all either way.—OUTIS.

CRYSTAL PALACE POULTRY SHOW.

CLASSES LIMITING THE VALUE TO £5.

The establishment of these classes having been recently the subject of discussion, and quoted in connection with the controversy regarding dealers exhibiting, and since associated by writers in connection with other purposes, it will, perhaps, be acceptable to know the actual object for which they were made.

Four years ago, being very anxious to make our show in London a success, I asked many friends who took an interest in poultry, but who were not exhibitors, to send a pen to the Crystal Palace, and I found among them a very nervous feeling with regard to placing their birds in an exhibition pen. They felt, and gave me many reasons why they considered they did not stand on an equal footing in placing their stock in competition with large and experienced breeders, and quoted instances in which some of the varieties had fallen into the hands of a few who always won, placed a prohibitory price on their birds, and never sold them, which made their classes almost a monopoly. To remedy this it was suggested that we should make a class for amateurs; but in considering the question we found defining the amateur such a difficult and invidious task, that it was then abandoned, but on reconsidering the matter, I thought it possible that the same end might be obtained by making some classes, limiting the value of the birds entered to a price that

would be acceptable to an amateur if his birds were sold, but that would shut out the champion. I find on reference to the "minutes of our meetings," this proposition was made by me three years ago, and therefore it could have no connection with any of the suggestions with which it has been recently associated. It was not then entertained by the Committee, the majority thinking that it might possibly hurt the standard classes; but I have brought the same proposal forward again in connection with each of our shows, and it was at last adopted; if the number of entries may be looked upon as a criterion, I am justified in saying with success. At the same time I am aware that all the objects I had in view have not yet been realised, but I think the classes may be regarded as a compromise, and that with a little modification they will offer a very favourable opportunity for amateurs to make their *début* at a poultry exhibition. —C. HOWARD.

NATIONAL PERISTERONIC SOCIETY.—This Society's Show, the most aristocratic of the London Pigeon fanciers' exhibitions, was held on the 17th inst. We must defer our report until next week.

TREDEGAR POULTRY SHOW.—This high-class Exhibition was held on the 17th and 18th inst. It was excellent, but both prize list and report came too late for publication this week.

PIGEONS AT THE BIRMINGHAM SHOW.

I CANNOT congratulate the Society upon the collection of Pigeons brought together this year, either as to quantity or quality, for in number the entries were barely more than one-half of last year, being this year 389 pens against 574 pens last year. Several distant and former exhibitors were conspicuous by their absence, also several of the Birmingham fanciers who last year were foremost in offering cups for several varieties. I was sorry to see this falling-off in what was once the show of the year. I think the Committee would do well to revise their schedule in several classes, notably the Pouters, the prizes for which might be curtailed and the difference added to some of the other high-class varieties. Above all, the pens, if they cannot be altered, require proper food and water troughs to be provided. The complaints were loud and just on this score, and nothing prevents success so much as inattention in this department.—H.

OUR LETTER BOX.

ROUEN AND AYLESBURY DUCKS CROSSED (E. T. F.).—They make a large and good Duck, and fatten easily. The only objection to the cross is, the produce of it is not as saleable as pure-bred birds if sent to market alive.

WATFORD SHOW (E. B.).—We have not received a report, but we are promised it for next week.

DUCK DYING AT BIRMINGHAM (T. L. B.).—We have not had time to make an examination. We know the bird was in perfect health at the Show, as we saw and admired her several times.

STOCK OF FOWLS (G. W. D.).—You will do better to begin at any rate with a quarter of the number, and to put fifty fowls in the space you mention. The bare part should slant sufficiently for the rain to run off. You may turn, or plough, or dig it twice per week in dry weather, but do not go on it in wet times.

COCHIN COCK DECLINING (J. D.).—It is more than probable the cock has picked up some saydust, or some indigestible substance at the show, and that it remains in his inside. Give him a good tablespoonful of castor oil. We fancy that will relieve him. If he is losing weight at the rate you mention he must soon die if it is not stopped. We find no difficulty in keeping a number of cocks shut up by themselves, and we keep them in health as easily as hens or pullets. Inasmuch, however, as it is impossible they should do as well as when at liberty, some of them go back and pine away. Such may be the case with yours. Why do you not give him a companion, since you think the lack of it is the cause of illness?

SILVER-SPANGLED HAMBURG POINTS (H. F. C.).—In both sexes the deaf ear should be faultlessly white and perfectly round. The tail should be white, mooned with black at the tip of each feather. The combs should be full of points, firmly placed on the middle of the head, piked behind, and the pike turning upwards. Breasts well mooned. The hens should have striped hackles. Weight is of no consequence.

LEG-WEAKNESS IN BRAHMA CHICKENS (W. W.).—It is more than probable the bird has outgrown its strength. At this time of year, and in this weather, he is not likely to remedy it. If you have other good chickens we advise you to put him in the stockpot, or in a pie or pudding. With cold weather and long nights the reparative process is very slow.

CROSSING GAME AND MALAY (G. L.).—The best way is to put a Malay cock to the Game hens. The cross is frequently used for the sake of certain qualities that are desirable, but all who use it are anxious to secure the properties without publishing the cross. We therefore advise the Malay cock and Game hens. There were some very remarkable cross-bred birds in the Game classes at Birmingham.

UNANSWERED QUERIES (J. G. Lyall).—We have no queries unanswered. If they were signed with your name or initials they were not delivered here.

BIRMINGHAM SHOW (Mrs. R.).—We believe Mr. Tomlinson won five prizes.

ASHFORD SHOW (E. L.).—Thanks, but as it was not advertised, we conclude it was wished to be local.

CAMBRIDGE POULTRY SHOW.—“Mr. Rose is wrong in stating that he won the first prize at our Show for hen Pouters with a young Blue. He sent four Pouters which I penned myself, and I can distinctly state that the first prize

for hens was awarded to a White, the second being taken by myself with a White hen, and third going to a bird belonging to Mrs. Ladd, this also a White. I shall be glad if you will insert this, as the honour of winning second prize, instead of being attached to my name, went to Mr. C. C. Ewbank, who did not take a prize, his birds being too late for competition. If Mr. Rose's White bird was a cock, I can only say that he put it in the wrong box, as I am confident they were penned right, for I had another member of the Committee with me at the time, and we remarked that we thought three out of the four were cocks.—E. W. METCALF, *Hon. Sec.*”

FOOD FOR COMMON PIGEONS (C. S.).—Any common waste grain, inferior beans, peas, barley. Give enough, and if young and healthy birds you will get ten or eleven nests a year.

GUINEA FOWLS (S. R. P.).—It is the hen only that utters the peculiar cry like “Come-back,” the note of the cock is only a kind of wail.

QUEEN EXPELLED FROM HIVE (N. S. S.).—In all probability your stock lost its old queen late in the autumn. The bees raised another from the brood, but all the drones having by that time been destroyed, she remained unfertilised, and has been cast out by her subjects. If this is the solution of your case, the hive must perish before next spring. We do not know where you can obtain a stock of Ligurians in a straw hive at a cheaper rate than usually advertised.

STEWARTON HIVES—FEEDING UNITED STOCKS (R. M. B.).—Will any of our correspondents kindly say where the Stewarton Hives are to be bought, and mention the name of any book which treats of their use and management? “Bee-keeping,” one of the “Manuals for the Many,” describes them. You can get a copy from this office for 5d., postage included. Your united bees may by constant feeding in mild weather be kept alive till spring, provided you keep them warm. Perhaps “B. & W.'s” suggestion as to shutting bees up in cold weather would suit this case. Try it, and report the result in our pages. We cannot understand why they eat so little food. Are you sure they have a queen? You will know this by their carrying pollen into the hive.

FEEDING AND VENTILATING BEES (H. F. R.).—Bees consume very little food during December and January, therefore probably 1 lb. of syrup would be sufficient to keep them alive till February. Then, however, they would want more liberal treatment. Our plan is, when Hives are very poor, to put a feeder on during sunshine on every warm day, taking it off before night. In this way they feed themselves sufficiently with the least risk of loss. Feeding will not now excite them if you are careful not to spill the food about, so as to excite other Hives. Do not shut them up while feeding. We think the ventilation of bees unnecessary, and often worse than useless. Give them plenty of entrance-room, according to the size of the stock and the number of bees, and they will know how and when to ventilate themselves. A 2-inch hole will be amply sufficient in the crown-board. The size of supers should be regulated by the strength of the hive. We do not think it matters what super you use, straw or wood. They do not take so kindly to glass supers.

METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	A.M.				IN THE DAY.					
	Baromet. at 32° and Sea Level.	Hygromet- er.		Direction of Wind.	Temp. of Shade.	Shade Tem- perature.		Radiation Temperature.		Rain.
		Dry.	Wet.			Max.	Min.	In sun.	On grass	
1872.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Dec.										
We. 11	29.340	38.5	37.1	N.W.	40.3	42.5	34.8	64.8	33.3	
Th. 12	30.015	29.9	28.0	W.	59.8	56.1	26.6	44.5	22.8	0.020
Fri. 13	29.825	39.2	38.3	S.W.	59.7	46.5	27.5	45.4	27.2	0.210
Sat. 14	29.513	34.3	34.3	N.E.	59.8	41.9	32.0	41.8	29.4	0.190
Sun. 15	29.782	44.1	44.0	S.	40.6	46.8	34.2	47.2	35.0	0.010
Mo. 16	29.850	38.0	38.0	N.W.	42.0	45.9	36.5	46.0	33.1	0.810
Tu. 17	29.827	42.9	41.8	S.W.	42.1	47.9	37.5	47.2	36.2	0.540
Means	29.665	38.0	37.4		40.7	43.9	32.7	43.1	31.0	1.780

REMARKS.

- 11th.—Dull morning, but fine afterwards though cold.
12th.—Sharp white frost in morning, and rather foggy both then and all day; very fine, and at times the sun shone very brightly.
13th.—Rain at 8 A.M., and more or less all day. A regularly uncomfortable day; foggy at night.
14th.—Foggy in the morning, and rain at intervals all day.
15th.—Very dark fog during the forenoon, and damp and thick all the remainder of the day.
16th.—Very foggy all the morning, and part of the afternoon, then clearer, but raining at intervals all day.
17th.—Grey in morning, rain commencing at 9, and continuing right on the whole day.

Temperature much the same as the previous week, but as the sun has scarcely shone at all the temperature in sun is much lower, and only 4° higher than that in the shade. Weather decidedly worse, and rainfall both continuous and heavy. The fall this year already exceeds that of any year since observations were commenced at this station. The total to the present time is 32.67 inches, whereas the wettest year since 1857—viz., 1860, only gave 32.24 inches.—G. J. SYMONS.

COVENT GARDEN MARKET.—DECEMBER 18.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	1 sieve	3 0 to 5 0	Mulberries.....	1 lb.	0 0 to 0 0
Apricots.....	doz.	0 0 0 0	Nectarines.....	doz.	0 0 0 0
Cherries.....	per lb.	0 0 0 0	Oranges.....	100	4 0 10 6
Chestnuts.....	bushel	12 0 20 0	Peaches.....	doz.	0 0 0 0
Currants.....	1 sieve	0 0 0 0	Pears, kitchen.....	doz.	1 0 8 0
Black.....	do.	0 0 0 0	dessert.....	doz.	3 0 4 0
Figs.....	doz.	0 0 0 0	Pine Apples.....	1 lb.	3 0 6 0
Filberts.....	lb.	1 0 1 6	Plums.....	1 sieve	0 0 0 0
Cobs.....	lb.	1 6 2 0	Quinces.....	doz.	1 0 8 0
Gooseberries.....	quart	0 0 0 0	Raspberries.....	lb.	0 0 0 0
Grapes, hothouse.....	lb.	2 0 5 0	Strawberries.....	1 lb.	0 0 0 0
Lemons.....	100	6 10 0	Walnuts.....	bushel	15 0 8 0
Melons.....	each	3 0 3 0	ditto.....	100	2 0 2 0

WEEKLY CALENDAR.

Day of Month.	Day of Week.	DEC. 26, 1872—JAN. 1, 1873.	Average Temperature near London.			Rain in 43 years.		Sun Rises		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.		m.	h.	m.	h.	m.	h.	m.	h.	Days.	m.	s.
26	TH	Bank Holiday.	49.3	31.4	37.3	16		7	48	57	43	24	3	11	1	26	1	4
27	F		49.0	29.7	36.4	15		8	8	57	3	47	4	34	1	27	1	34
28	S	INNOCENTS' DAY.	49.6	29.5	36.0	13		8	8	58	3	11	6	5	2	28	2	3
29	SUN		49.9	33.0	38.5	20		8	8	58	3	34	7	50	2	29	2	33
30	M	1 SUNDAY AFTER CHRISTMAS.	44.4	31.7	38.1	17		8	8	58	3	46	8	53	3	30	3	2
31	TU		43.9	32.4	38.2	15		8	8	59	3	42	9	12	5	31	3	31
1	W	CIRCUMCISION.	43.0	30.3	36.6	12		8	8	0	4	21	10	41	6	2	3	44

From observations taken near London during forty-three years, the average day temperature of the week is 43.4°; and its night temperature 31.1°. The greatest heat was 58°, on the 28th, 1855; and the lowest cold 8°, on the 26th, 1853. The greatest fall of rain was 0.70 inch.

CHRYSANTHEMUM CULTURE.



NOVEMBER has come and gone; November "chill and clear," chill and foggy. Chill and wet it has been this year; consequently a bad season either for flowers or fruits keeping well. There have been many complaints of Grapes spoiling by damping-off, and the Chrysanthemum blooms also kept badly. During such unfavourable weather as we have had recently much care is necessary. Spill as little water about as possible. A circulation of air must also be kept up by using the heating apparatus during the day, allowing the fire to go out, or nearly so, at night, and shutting-up the house early in the afternoon.

This season has been a bad one throughout for the Chrysanthemum. A low temperature in May and June checked the growth of the plants, and caused much of the foliage to drop-off, especially from those grown for the quality of the flowers. Specimen plants of the large-flowered varieties, as well as of the Pompons, have not been so well finished this year; the quality of the flowers has been below the usual standard.

Those who do not grow their plants for exhibition have little idea of the labour that is expended upon specimen plants. Before this season's plants are out of flower it is time to put in the cuttings for the following year. All intended to be grown into good specimens should be rooted plants by the middle of December, as it will be sufficiently evident that the larger the plants and the greater the number of flowers, quality being about equal, the greater the merit of the specimen. In order that the plants may experience no check, I place each cutting separately in the centre of a small pot, shifting on as may be required. The best place in which to keep the young plants during the winter is a low span-roofed pit, placing the pots close to the glass. The cuttings will strike root in such a place very well. The lights ought to be kept close until the cuttings are rooted. It is not desirable to plunge the pots in bottom heat at this season, or to use any more artificial heat than is necessary to keep the frost out. When the young plants have grown 5 or 6 inches stop them; this will cause the production of shoots near the top of the plant—five are a good number. These must be again pinched when long enough, and tied-off before they become too stiff, as the shoots are easily broken off at the joints. The secret of success is keeping the plants healthy and close to the glass, to cause the production of short-jointed wood. They likewise require liberal supplies of water during the whole season of their growth. If the plants are stinted of water, the foliage will have a sickly appearance, and die-off prematurely.

At the time a specimen plant is in full flower the shoots should be completely clothed with healthy foliage. The flowers should be incurved and of full size, each flower to be supported by a slender stick. Some of the varieties with reflexed flowers are very showy; such as Annie Salter (yellow), Dr. Sharpe (purple), and others of this

class make exceedingly handsome specimens. The size of pot which is generally used for flowering them in is about 11½ inches in diameter inside measure.

The Pompon varieties are flowered in 8½-inch pots, and require similar treatment to the others, except that only a few sticks are required to train the shoots into position.

The Japanese varieties are also much grown now, and the treatment they require is very similar to that recommended for the large-flowering sorts of the Chinese section, except that it is preferable not to tie-down the shoots too closely; they should be allowed to grow more upright. The flowers of this section are very distinct and singular in appearance, and the colours of many of them are very brilliant. February is a good time to put in the cuttings, and I should advise their being pinched once. The shoots which will be thrown out should not be bent or twisted in any way, but be allowed to grow in a natural manner; they will flower well in 10 or 11-inch pots. Each plant will carry two or three dozen flowers, and when judiciously arranged in the house they will relieve most effectively the dumpy and formal appearance of regularly-trained specimens of the large-flowered and Pompon varieties.

It is not necessary to put in the cuttings of Chrysanthemums intended to be grown for cut blooms until February or early in March. They should be struck in a little bottom heat; very little heat is required, as it only forces the plants into too rapid growth. When it is perceived that the plants are rooted, abundant supplies of air should be admitted to them, and as soon as they are fairly established remove them to a cold frame, the lights of which should be taken off in fine weather. Be careful to pot-on the young plants as they require it, placing them finally in pots from 9 to 12 inches in diameter, two plants in the smaller-sized pots, and three in the larger. Do not pinch them at all, remove only the side shoots; each of the plants will carry on an average three flowers. Those who grow for exhibition manage them in this way; but the plants are also very valuable for back rows in the conservatory, or arranged in groups as the Messrs. Salter used to exhibit them at Hammersmith. A grand display of plants grown in this way was also exhibited by the Messrs. Veitch in their Royal Exotic Nursery, Chelsea, during the present season, where the noble and symmetrical blooms of the large-flowered section vied with the quaint and weird-like forms of the Japanese, the whole set-off to the best advantage with the handsome and glossy-green foliage of the Camellias planted-out in the conservatory border. I, for one, am well pleased that Messrs. Veitch have "gone in" for Chrysanthemums, as whatever they undertake is done well, and if they go on as they have begun we shall soon cease to bewail the dispersion of Messrs. Salter's collection.

There will be little difficulty in arranging the plants to advantage in any establishment. The trouble is to grow them, and this is more a matter of labour than skill, as the plant is easily grown. They require great attention to watering during the summer months, when much other

work has to be done, and neglect at this time cannot be made up for by after-care. The Chrysanthemum is worth all the care that can be bestowed upon it, as it produces an abundance of beautiful flowers at a time when, but for them, we should have great difficulty in meeting the demand.

As regards soil, this requires to be substantial, the Chrysanthemum being a gross feeder. The following compost is the best I have tried:—Four parts good medium loam, one part rotted manure, and some pounded oyster-shells, with one barrowload of leaf mould to every eight of the compost.

With regard to varieties, there is a good general list given in THE JOURNAL OF HORTICULTURE for December 12th, but a few of the best exhibition varieties are omitted, such as Princess of Teck, Miss Mary Morgan, Her Majesty, Lady Slade, White Venus, Aurea multiflora, Little Pet, Eve, William Edward, White Globe, Golden Beverley, and Emblem. Amongst the Pompons should be Mdle. Marthe, Antonius, Astrea, and Monsieir Astie. The Japanese section is best represented by such sorts as Dr. Masters, Sol, James Salter, The Daimio, Bronze Dragon, Comet, Red Dragon, Grandiflora, Elaine, Fair Maid of Guernsey, Chang, Magnum Bonum, Tarantula, Meg Merrilees, and The Sultan.—J. DOUGLAS.

JAPAN HONEYSUCKLE FRUITING.

It may interest you or your readers to hear of the fruiting of the *Lonicera japonica reticulata* in the open air, as I do not remember hearing of an instance. I have a plant against a wall with a west aspect, and I may say that it is growing wild, and competes successfully with a dense mass of Ivy that overtops the wall from the other side. The *Lonicera* blooms every year, and most deliciously fragrant it is in the evenings; but this day I was surprised to find that it had fully ripened a dozen berries. The berries bear a great resemblance to those of the *Laurustinus*; they are quite black, shining, and round, without the metallic appearance of the *Laurustinus*. They are borne either singly or in pairs—at least, none of mine exceeded two on the same twig. I intend sowing these berries in the hope of getting a still harder variety than the parent plant. I shall be glad if you can spare room for this letter, as it may evoke further information on the subject.—FREDERICK TIXMONS, Clerk, Clogbran, Co. Dublin.

ADAPTATION OF STRAWBERRIES.

As no tailor can make a suit of clothes to fit everybody, so I do not think anyone can select Strawberries that will suit or please everybody. Soils, climates, seasons have much to do with success. Few are the *bonâ fide* fragarians of extensive experience. I have been just twenty years a student, and have under my care at least 150 sorts of Strawberries. I know those well which I name below.

FOR FORCING.—May Queen, Black Prince, Keens' Seedling, Alice Maude, Sir Joseph Paxton, and Eclipse. Late: Sir Charles Napier, Dr. Hogg, Mr. Radclyffe, Frogmore Pine.

FOR OUT-DOOR CULTURE.—Early: Black Prince, Eclipse, Sir Joseph Paxton, Alice Maude, Prince of Wales, Empress Eugénie, Marquise de Latour Maubourg. Mid-season: Rivers' Eliza, Napoléon III. (Gloëde), a first-rate plant and excellent. I have just sent for some plants of it again. It is not sufficiently known. John Powell (Ingram), quite first-rate. If I were to keep one Strawberry only, it would be Eliza; I never knew it fail me. Lucas, fine form of plant and berry, and of fine flavour. It has but one fault—it gives a few noble berries, but does not bring on to size its after-rearage. Late: Dr. Hogg, Frogmore Pine, Cockscumb, Wonderful, Mr. Radclyffe. Late White Strawberry: Bicton Pine. I have given up this Strawberry and Frogmore Pine, as the winters are occasionally too severe for them in the vale of Blackmoor. They are both first-rate when highly ripened. They are usually gathered too soon. Best Hautbois: Royal Hautbois. Best Alpine, Red: Galande.

I see no use in keeping a curiosity-shop. The Strawberry season is usually short, and can, I fear, be only lengthened by the Alpines. I had a capital dish of Galande, September 6th. My team is but small, but they do all I want. They are Rivers' Eliza, Dr. Hogg, Mr. Radclyffe, Cockscumb, Wonderful, Napoléon III., and Galande. I had a capital lot of Strawberries this year, and supplied Sir William Marriott with two large baskets of Eliza, Cockscumb, Dr. Hogg, and Mr. Radclyffe, as late as July 18th. He had a cricket match, and ball, and supper, entertaining the "Wiltshire Wanderers."

He sent his under gardener over, saying, "I have not a Strawberry."

STRAWBERRIES FOR CARELESS PEOPLE.—Alice Maude, Sir Joseph Paxton, Empress Eugénie, Napoléon III., Eclipse, Trollope's Victoria, Prince of Wales (Ingram), Rivers' Eliza. I sent this last Strawberry to Mr. Farquharson's gardener (Mr. Knox) some years ago, and what did he say to me?—"Sir, I thank you for Eliza, for if it had not been for it we should not have had a Strawberry this season."

One word more and I have done. Scarlet Pine and Royalty, which as sent to me are the same in plant, form of berry, colour, and flavour, I cast out for being precarious setters. I know no higher-flavoured Strawberries. I think Royalty was the better setter of the two. Both were strong hardy plants. I was sorry to give them up. I have John Powell in their place. It is of very fine flavour, uniform in berry, the finest of all for colour, and a good setter. It is of the same flavour as the above, but slightly brisker.—W. F. RADCLYFFE.

ELECTION OF ROSES.—No. 2.

BEFORE proceeding to give the votes of the several electors at the late poll I would remark that in the last issue the printer has, by misplacing a comma, made Mr. Cant's remarks on the new Roses rather unintelligible. It should have been, "I should have liked to have included amongst the fifty, three new ones," &c., not "amongst the fifty-three," as in last week's number. Another point to which I may draw the attention of your readers is the fact that only a very few Roses obtain the almost unanimous vote of the electors as in the best twelve, and that the drop in votes after these six or eight are named is something very curious. For instance, in the first twelve Charles Lefebvre has 40 votes; Maréchal Niel, 37; Alfred Colomb, 35; Madame Rothschild, 35; La France, 34; Marie Baumann, 33. Then comes the drop of nearly half the number of votes—John Hopper, 20 votes; Comtesse d'Oxford, 19; Gloire de Dijon, 19. Comtesse d'Oxford, I have no manner of doubt, must receive another year a great many more first-class votes; and, judging from the list, so must Emilie Hausburg.

Then I have drawn the attention of fellow amateurs to the fact that we do not value some Roses in the same proportion as the nurserymen. I venture to suggest to the nurserymen that there is one Rose they do not sufficiently appreciate—Souvenir d'un Ami: it is only named five times by them in the fifty. True, two out of the five proclaim it first-class, but five out of fifteen are a very small minority. For a Tea Rose it is fairly hardy. It is a free bloomer. The blooms themselves are exquisite both in colour and form, and in my humble opinion add vastly to the charms of a stand. Amongst the fair sex—and of course they are the best judges of beauty—I know few Roses more admired; and then, although "a Rose by any other name would smell as sweet," no other name sounds so sweet to them. It is in unison with the beauty of the Rose.—JOSEPH HINTON, Warminster.

MR. J. KEYNES, Salisbury.

- | | |
|-----------------------------|---------------------------|
| 1. Maréchal Niel | 33. Reine du Midi |
| 2. Devoniensis | 34. Sénateur Vaisse |
| 3. Alfred Colomb | 35. Sophie Coquerel |
| 4. Charles Lefebvre | 36. Victor Verdier |
| 5. Emilie Hausburg | 37. Xavier Olibo |
| 6. Duke of Edinburgh | 38. Catherine Mermet |
| 7. Madame Rothschild | 39. Madame Cécile Berthod |
| 8. Marie Baumann | 40. Madame Camille |
| 9. Marquise de Castellane | 41. Souvenir d'Elise |
| 10. Edward Morren | 42. Duc de Rohan |
| 11. Countess of Oxford | 43. Duchesse de Morny |
| 12. La France | 44. Dupuy-Jamain |
| 13. Beauty of Waltham | 45. Josephine Beauharnais |
| 14. Etienne Levet | 46. Louise Peyronny |
| 15. Ferdinand de Lesseps | 47. Madame Vidot |
| 16. Fisher Holmes | 48. Mdle. M. Dombain |
| 17. Gloire de Vitry | 49. Monsieur Noman |
| 18. Hippolyte Flandrin | 50. Paul Néron |
| 19. John Hopper | |
| 20. Louis Van Houtte | |
| 21. Lyonnais | |
| 22. Madame Bellon | |
| 23. Madame Lefebvre Bernard | |
| 24. Madame Charles Wood | |
| 25. Madame Victor Verdier | |
| 26. Mdle. Eugénie Verdier | |
| 27. Mdle. Marie Rady | |
| 28. Marguerite de St. Amand | |
| 29. Marquise de Mortemart | |
| 30. Monsieur Woolfield | |
| 31. Perfection de Lyon | |
| 32. Pierre Notting | |

TEAS AND NOISETTES.

1. Maréchal Niel
2. Triomphe de Rennes
3. Souvenir d'Elise
4. Niphotos
5. Souvenir d'un Ami
6. Devoniensis
7. Madame Willermoz
8. Catherine Mermet
9. Madame Cécile Berthod
10. Madame Camille
11. Belle Lyonnaise
12. Souvenir de Paul Néron

Mr. H. BENNETT, Stapleford Nurseries, near Wilton.

1. Maréchal Niel
2. Charles Lefebvre
3. Marie Baumann
4. Duke of Edinburgh
5. Emilie Hausburg
6. Mdlle. Eugénie Verdier
7. Marquise de Castellane
8. La France
9. Dr. Andry
10. Hippolyte Flandrin
11. Comtesse d'Oxford
12. Alfred Colomb
13. Paul Néron
14. Louis Van Houtte
15. Abel Grand
16. Madame Victor Verdier
17. Madame Caillaud
18. Madame Willermoz
19. Madame Clémence Joigneaux
20. Madame Charles Crapelet
21. Madame Boutin
22. Madame Rothschild
23. Mdlle. Marie Rady
24. Edouard Morren
25. Xavier Olibo
26. Sophie Coquerelle
27. John Hopper
28. Belle Lyonnaise
29. François Louvat
30. Catherine Mermet
31. Sénateur Vaisse
32. Marguerite de St. Amand

33. Elie Morel
34. Comtesse de Paris
35. Louise Peyronny
36. Maréchal Vaillat
37. Camille Bernardin
38. Paul Ricaut
39. Horace Vernet
40. Duc de Rohan
41. Leopold I.
42. Duchesse de Caylus
43. Niphotos
44. Felix Genero
45. Duchesse de Morny
46. Exposition de Brie
47. Professor Koch
48. Prince de Portia
49. Pierre Notting
50. Baron Gonella

TEAS AND NOISETTES.

1. Maréchal Niel
2. President
3. Alba Rosea
4. Rubens
5. Souvenir d'Elise
6. Souvenir d'un Ami
7. Niphotos
8. Belle Lyonnaise
9. Cloth of Gold
10. Moiret
11. Madame Willermoz
12. Rubens

Mr. T. LISTER, Park Road, Bingley.

1. Maréchal Niel
2. Marie Baumann
3. Emilie Hausburg
4. Mdlle. Eugénie Verdier
5. Marquise de Castellane
6. Sénateur Vaisse
7. Pierre Notting
8. Gloire de Dijon
9. Charles Lefebvre
10. Comtesse de Chabillant
11. Comtesse d'Oxford
12. Madame Rothschild

13. Alexander Humboldt
14. Antoine Ducher
15. Abel Grand
16. Alfred Colomb
17. Beauty of Waltham
18. Centifolia Rosea
19. Clémence Raoux
20. Charles Verdier
21. Duc de Rohan
22. Duke of Edinburgh
23. Dr. Andry
24. Dupuy-Jamain
25. Elie Morel
26. Exposition de Brie
27. Edouard Morren
28. Ferdinand de Lesseps
29. Felix Genero
30. Louis Van Houtte
31. John Hopper
32. La France

33. Lord Macaulay
34. La Ville de St. Denis
35. Madame Vidot
36. Madame Cirodde
37. Madame Noman
38. Madame Victor Verdier
39. Madame Charles Wood
40. Marquise de Mortemart
41. Marguerite de St. Amand
42. Maréchal Vaillant
43. Pitord
44. Princess Mary of Cambridge
45. Souvenir d'un Ami
46. Souvenir de la Malmaison
47. Thomas Methven
48. Thorin
49. Xavier Olibo
50. Victor Verdier

TEAS AND NOISETTES.

1. Maréchal Niel
2. Souvenir d'un Ami
3. Adam
4. Vicomtesse de Cazes
5. Triomphe de Rennes
6. Rubens
7. Niphotos
8. Madame Bravy
9. Madame de St. Joseph
10. Madame Margottin
11. Gloire de Dijon
12. Devoniensis

Mr. J. CRANSTON, King's Acre Nurseries, Hereford.

1. President Thiers
2. Maréchal Niel
3. Alfred Colomb
4. Gloire de Dijon
5. Andre Dunand
6. Baroness Rothschild
7. Comtesse d'Oxford
8. Duke of Edinburgh
9. La France
10. Lyonnais
11. Louis Van Houtte
12. Marquise de Castellane

13. Charles Lefebvre
14. John Hopper
15. Horace Vernet
16. Jules Margottin
17. Leopold II.
18. Lord Macaulay
19. Louisa Wood
20. Madame Bellon
21. Madame Charles Crapelet
22. Madame Charles Wood
23. Madame George Schwartz
24. Madame Lefebvre Bernard
25. Madame Victor Verdier
26. Madame Vidot
27. Mdlle. Eugénie Verdier
28. Mdlle. Marguerite Dombrain
29. Marguerite de St. Amand
30. Marie Baumann
31. Marquise de Gibot
- 32.

33. Mons. Etienne Levét
34. Madame Alice Dureau
35. Mdlle. Annie Wood
36. Capitaine Lamure
37. Dupuy-Jamain
38. Edouard Morren
39. Charles Rouillard
40. Comtesse de Chabillant
41. Dr. Andry
42. Emilie Hausburg
43. Exposition de Brie
44. Paul Néron
45. Nardy Frères
46. Pierre Notting
47. Reine Blanche
48. Sénateur Vaisse
49. Souvenir de la Malmaison
50. Devoniensis

TEAS AND NOISETTES.

1. Alba Rosea
2. Gloire de Dijon
3. Devoniensis
4. Maréchal Niel
5. Triomphe de Rennes
6. Madame Berard
7. Madame Falcot
8. Madame Margottin
9. Souvenir d'Elise
10. Céline Forestier
11. Souvenir d'un Ami
12. Madame Maurin

Mr. C. TURNER, Slough.

1. Alfred Colomb
2. Devoniensis
3. Duke of Edinburgh
4. Madame Victor Verdier
5. Maréchal Niel
6. Marie Baumann
7. Madame Rothschild
8. Charles Lefebvre
9. John Hopper
10. Louise Van Houtte
11. Gloire de Dijon
12. La France
13. Abel Grand
14. Alba Rosea
15. Belle Lyonnaise
16. Camille Bernardin
17. Capitaine Lamure
18. Céline Forestier
19. Centifolia Rosea
20. Charles Lawson
21. Charles Rouillard
22. Comtesse d'Oxford
23. Dr. Andry
24. Duke of Wellington
25. Exposition de Brie
26. Horace Vernet
27. Ferdinand de Lesseps
28. Jules Margottin
29. Général Jacqueminot
30. Madame Alice Dureau
31. Madame Clémence Joigneaux
32. Madame Falcot

33. Madame Guillot de Mont Favet
34. Madame Willermoz
35. Madame Charles Crapelet
36. Mdlle. Eugénie Verdier
37. Mdlle. Thérèse Levét
38. Marguerite de St. Amand
39. Marquise de Castellane
40. Maurice Bernardin
41. Paul Néron
42. Prince Camille de Rohan
43. Nardy Frères
44. Paul Verdier
45. Sénateur Vaisse
46. Souvenir de la Malmaison
47. Triomphe de Rennes
48. Xavier Olibo
49. Victor Verdier
50. Edouard Morren

TEAS AND NOISETTES.

1. Alba Rosea
2. Devoniensis
3. Belle Lyonnaise
4. President
5. Madame Willermoz
6. Madame Falcot
7. Gloire de Dijon
8. Souvenir d'Elise
9. Maréchal Niel
10. Triomphe de Rennes
11. Lamarque
12. Niphotos

Mr. G. WHEELER, Warminster.

1. Abel Grand
2. Alfred Colomb
3. Charles Lefebvre
4. Devoniensis
5. Elie Morel
6. Dupuy-Jamain
7. Felix Genero
8. Maréchal Niel
9. Pierre Notting
10. Souvenir d'un Ami
11. Marquise de Castellane
12. Marie Baumann

13. Achille Gonod
14. Alba Rosea
15. Antoine Ducher
16. Belle Lyonnaise
17. Céline Forestier
18. Charles Rouillard
19. Comtesse d'Oxford
20. Dr. Andry
21. Duc de Wellington
22. Duchesse de Morny
23. Duchesse d'Orléans
24. Edouard Morren
25. Ferdinand de Lesseps
26. Fisher Holmes
27. François Lacharme
28. Gloire de Dijon
29. Gloire de Santenay
30. Henri Ledechaux
31. John Hopper
32. La France

33. Louise Peyronny
34. Louise Van Houtte
35. Leopold I.
36. Mdlle. Marie Rady
37. Marguerite de St. Amand
38. Madame Chirard
39. Madame Charles Crapelet
40. Madame Charles Wood
41. Madame Fillion
42. Madame Moreau
43. Madame Rothschild
44. Madame Victor Verdier
45. Madame Liabaud
46. Marquise de Mortemart
47. Maurice Bernardin
48. Monsieur Noman
49. Princess Mary of Cambridge
50. Victor Verdier

TEAS AND NOISETTES.

1. Belle Lyonnaise
2. Souvenir d'un Ami
3. Devoniensis
4. Céline Forestier
5. Maréchal Niel
6. Gloire de Dijon
7. Lamarque
8. Triomphe de Rennes
9. Madame Levét
10. Madame Céline Noirey
11. Alba Rosea
12. Catherine Mermet

Mr. HENRY MAY, The Hope Nursery, Bedale.

1. Madame Rothschild
2. Charles Lefebvre
3. Xavier Olibo
4. Maréchal Niel
5. Marie Baumann
6. Pierre Notting
7. Souvenir de la Malmaison
8. Gloire de Dijon
9. Maurice Bernardin
10. Monsieur Noman
11. Marquise de Mortemart
12. La France

13. Abbé Giraudier
14. Alfred Colomb
15. Antoine Ducher
16. Abel Grand
17. Anna de Diesbach
18. Baronne Haussman
19. Camille Bernardin
20. Charles Turner
21. Comtesse de Chabillant
22. Comtesse d'Oxford
23. Duke of Wellington
24. Duc de Rohan
25. Duke of Edinburgh
26. Duchesse de Morny
27. Dupuy-Jamain
28. Duchesse de Caylus
29. Emilie Hausburg
30. Felix Genero
31. François Lacharme
32. Goubault

33. Louise Peyronny
34. Lyonnais
35. Madame Moreau
36. Madame Noman
37. Madame Vidot
38. Madame Victor Verdier
39. Mdlle. Bonnaire
40. Mdlle. Thérèse Levét
41. Mdlle. Annie Wood
42. Marguerite de St. Amand
43. Mdlle. Marie Rady
44. Madame Clémence Joigneaux
45. Prince Camille de Rohan
46. Sénateur Vaisse
47. Souvenir d'un Ami
48. Mdlle. Marguerite Dombrain
49. Baronne Louise Uxkull
50. Princess Beatrice

TEAS AND NOISETTES.

1. Alba Rosea
2. Adam
3. Devoniensis
4. Goubault
5. Gloire de Dijon
6. Madame Margottin
7. Madame Willermoz
8. Marie Sisley
9. Maréchal Niel
10. Madame Levét
11. Triomphe de Rennes
12. Souvenir d'un Ami

Mr. W. PAUL, Waltham Cross, London.

1. Alfred Colomb
2. Charles Lefebvre
3. La France
4. Louis Van Houtte
5. Madame Rothschild
6. Madame Victor Verdier
7. Mdlle. Thérèse Levet
8. Maréchal Niel
9. Marie Baumann
10. Marquise de Castellane
11. Princess Beatrice
12. Souvenir de la Malmaison

13. Abel Grand
14. Antoine Ducher
15. Baron Chaurand
16. Beauty of Waltham
17. Comte de Raimbault
18. Comtesse de Chabillant
19. Comtesse d'Oxford
20. Devienne Lamy
21. Devoniensis
22. Dr. Andry
23. Duke of Edinburgh
24. Dupuy-Jamain
25. Edouard Morren
26. Elie Morel
27. Felix Genero
28. Ferdinand de Lesseps
29. Fisher Holmes
30. Général Jacqueminot
31. Gloire de Dijon
32. Horace Vernet

33. John Hopper
34. Lady Suffield
35. La Ville de St. Denis
36. Lord Macaulay
37. Madame Bellenden Ker
38. Madame Charles Wood
39. Madame Chirard
40. Madame Fillion
41. Madame Vidot
42. Mdlle. Annie Wood
43. Mdlle. Eugénie Verdier
44. Mdlle. Marie Rady
45. Marguerite de St. Amand
46. Monsieur Noman
47. Paul Néron
48. Pierre Notting
49. Princess Christian
50. Victor Verdier

TEAS AND NOISSETTES.

1. Maréchal Niel
2. Gloire de Dijon
3. Devoniensis
4. Cloth of Gold
5. Céline Forestier
6. Alba Rosea
7. Belle Lyonnaise
8. Niphotos
9. Lamarque
10. President
11. Souvenir d'Elise
12. Souvenir d'un Ami

Messrs. PAUL & SONS, Cheshunt Nurseries, Herts.

1. Alfred Colomb
2. Madame Rothschild
3. Charles Lefebvre
4. Comtesse d'Oxford
5. Dr. Andry
6. La France
7. Paul Néron
8. Sénateur Vaisse
9. President Thiers
10. Gloire de Dijon
11. Madame Victor Verdier
12. Marquise de Castellane

13. Monsieur Noman
14. Abel Grand
15. Antoine Ducher
16. Baronne Adolphe de Rothschild
17. Beauty of Waltham
18. Camille Bernardin
19. Caroline de Sansal
20. Centifolia Rosea
21. Charles Rouillard
22. Comtesse de Chabillant
23. Dupuy-Jamain
24. Duc de Rohan
25. Duke of Edinburgh
26. Edouard Morren
27. Elie Morel
28. Emilie Hausburg
29. Exposition de Brie
30. Fisher Holmes
31. François Louvat
32. Général Jacqueminot

33. Horace Vernet
34. John Hopper
35. Louise Peyronny
36. Lafontaine
37. Louise Van Houtte
38. Madame Alice Dureau
39. Madame Clémence Joigneaux
40. Mdlle. Thérèse Levet
41. Mdlle. Eugénie Verdier
42. Maréchal Vaillant
43. Marguerite de St. Amand
44. Marie Baumann
45. Mdlle. Marie Rady
46. Pierre Notting
47. Vicomte Vigier
48. Victor Verdier
49. Lyonnais
50. President Thiers

TEAS AND NOISSETTES.

1. Gloire de Dijon
2. Devoniensis
3. Souvenir d'Elise
4. Souvenir d'un Ami
5. Madame Willermoz
6. Madame Falcot
7. Madame Margottin
8. Alba Rosea
9. Catherine Mermet
10. Niphotos
11. President
12. Rubens

Mr. R. B. CANT, St. John Street Nursery, Colchester.

1. Alfred Colomb
2. Madame Rothschild
3. Charles Lefebvre
4. Dr. Andry
5. Emilie Hausburg
6. John Hopper
7. Marguerite de St. Amand
8. Mdlle. Marie Rady
9. Devoniensis
10. Souvenir d'Elise
11. Marie Baumann
12. Maréchal Niel

13. Abel Grand
14. Clotilde Rolland
15. Comtesse de Chabillant
16. Comtesse d'Oxford
17. Devienne Lamy
18. Duc de Wellington
19. Duchesse de Caylus
20. Duke of Edinburgh
21. Dupuy-Jamain
22. Edouard Morren
23. Ferdinand de Lesseps
24. François Louvat
25. Gloire de Vitry
26. Horace Vernet
27. Duchesse de Morny
28. La France
29. Louise Van Houtte
30. Madame Charles Wood
31. Madame Clémence Joigneaux
32. Madame Bellon

33. Madame Charles Crapélet
34. Madame Victor Verdier
35. Madame Vidot
36. Mdlle. Eugénie Verdier
37. Madame Thérèse Levet
38. Monsieur Noman
39. Monsieur Etienne Levet
40. Marquise de Castellane
41. Pierre Notting
42. Prince Camille de Rohan
43. Sénateur Vaisse
44. Maurice Bernardin
45. Sophie Coquerelle
46. Xavier Olibo
47. Gloire de Dijon
48. La Boule d'Or
49. Niphotos
50. Souvenir d'un Ami

TEAS AND NOISSETTES.

1. Céline Forestier
2. Triomphe de Rennes
3. Devoniensis
4. La Boule d'Or
5. Niphotos
6. Souvenir d'Elise
7. Maréchal Niel
8. Belle Lyonnaise
9. Madame Willermoz
10. Gloire de Dijon
11. Rubens
12. Souvenir d'un Ami

I have a high opinion of Tea Souvenir de Paul Néron, H.P.; Baron de Prailly, and Madame Lefebvre Bernard."

Mr. GEORGE PRINCE, Market Street, Oxford.

1. Maréchal Niel
2. Alfred Colomb
3. Charles Lefebvre
4. Comtesse d'Oxford
5. Horace Vernet
6. La France
7. Madame Rothschild
8. Madame Victor Verdier
9. Mdlle. Eugénie Verdier
10. Marie Baumann
11. Marquise de Castellane
12. Xavier Olibo

13. Baron Haussman
14. Camille Bernardin
15. Capitaine Lamure
16. Clémence Raoux
17. Dr. Andry
18. Duke of Edinburgh
19. Dupuy-Jamain
20. Edward Morren
21. Emilie Hausburg
22. Etienne Levet
23. Exposition de Brie
24. Ferdinand de Lesseps
25. Gloire de Santenay
26. Hippolyte Flandrin
27. John Hopper
28. Louise Van Houtte
29. Madame George Schwartz
30. Madame Lefebvre Bernard
31. Mdlle. Thérèse Levet
32. Marguerite de St. Amand

TEAS AND NOISSETTES.

1. Maréchal Niel
2. Souvenir de Paul Néron
3. Souvenir d'un Ami
4. Madame Trifle
5. Madame Margottin
6. Marie Van Houtte
7. Madame Jules Margottin
8. Devoniensis
9. Gloire de Dijon
10. Catherine Mermet
11. Belle Lyonnaise
12. Adam

Mr. GEORGE COOLING, Batheaston Nurseries, Bath.

1. Alfred Colomb
2. Camille Bernardin
3. Charles Lefebvre
4. Comtesse d'Oxford
5. Duke of Edinburgh
6. La France
7. Madame Rothschild
8. Marquise de Castellane
9. Pierre Notting
10. Sénateur Vaisse
11. Gloire de Dijon
12. Maréchal Niel

13. Beauty of Waltham
14. Comte de Nanteuil
15. Comtesse de Chabillant
16. Comtesse de Jaucourt
17. Dupuy-Jamain
18. Edward Morren
19. Empereur de Maroc
20. Exposition de Brie
21. Ferdinand de Lesseps
22. Fisher Holmes
23. Général Jacqueminot
24. John Hopper
25. Jules Margottin
26. Louise Peyronny
27. Lord Macaulay
28. Lord Clyde
29. Louise Van Houtte
30. Madame Girodte
31. Madame Clémence Joigneaux
32. Madame Moreau

TEAS AND NOISSETTES.

1. Adam
2. Abricote
3. Devoniensis
4. Elise Fradel
5. Elise Sauvage
6. Gloire de Dijon
7. Madame de St. Joseph
8. Madame Falcot
9. Niphotos
10. Souvenir d'un Ami
11. Maria Van Houtte
12. Maréchal Niel

Mr. JOHN DURBIX, Englishcombe Rosery, near Bath.

1. Maréchal Niel
2. President Thiers
3. Duke of Edinburgh
4. La France
5. Charles Lefebvre
6. Emilie Hausburg
7. Madame Rothschild
8. Souvenir d'Elise
9. Mdlle. Eugénie Verdier
10. Comtesse d'Oxford
11. Alfred Colomb
12. John Hopper

13. Sénateur Vaisse
14. Marie Baumann
15. Mdlle. Marie Rady
16. Prince Camille de Rohan
17. Madame Bellon
18. Lyonnais
19. Duchesse de Morny
20. Edouard Morren
21. Boule de Neige
22. Madame Jacquier
23. François Lacharme
24. Felix Genero
25. Madame Victor Verdier
26. Madame Clémence Joigneaux
27. Madame William Paul
28. Madame Girodte
29. Marquise de Castellane
30. Gloire de Dijon
31. Paul Néron
32. Mdlle. Annie Wood

TEAS AND NOISSETTES.

1. Maréchal Niel
2. Gloire de Dijon
3. Devoniensis
4. Solfaterre
5. Rubens
6. Belle Lyonnaise
7. Madame Margottin
8. Catherine Mermet
9. Madame Willermoz
10. Mdlle. Cécile Berthod
11. Madame Falcot
12. Cloth of Gold

Mr. Cant says—"Madame Bellon and Etienne Levet I have no doubt ought to be in the fifty, and may probably even get a further advance another year.

MR. RICHARD SMITH, Worcester.

1. Alfred Colomb
2. Madame Rothschild
3. Duke of Edinburgh
4. Charles Lefebvre
5. La France
6. Louise Van Houtte
7. Mlle. Annie Wood
8. Marie Baumann
9. Sénateur Vaisse
10. Gloire de Dijon
11. Souvenir d'un Ami
12. Maréchal Niel
13. Céline Forestier
14. Niphetos
15. Madame Falcot
16. Devoniensis
17. Abel Grand
18. Antoine Ducher
19. Baronne de Maynard
20. Boule de Neige
21. Centifolia Rosa
22. Comtesse d'Oxford
23. Comtesse de Chabillant
24. Dr. Andry
25. Duc de Rohan
26. Exposition de Brie
27. Felix Genero
28. Dupuy-Jamain
29. Duchesse de Caylus
30. Henri Ledechaux
31. Horace Vernet
32. John Hopper
33. Leopold I.
34. Madame Eugène Appert
35. Madame Liabaud
36. Madame Noman
37. Madame Victor Verdier
38. Madame Vidot
39. Mlle. Bonnaire
40. Mlle. Eugénie Verdier
41. Marguerite de St. Amand
42. Marquise de Castellane
43. Mlle. Marie Rady
44. Pierre Nott ng
45. Prince Camille de Rohan
46. Prince Humbert
47. Souvenir de M. Boll
48. Victor Verdier
49. Xavier Olibo
50. Souvenir de la Malmaison

TEAS AND NOISSETTES.

1. Gloire de Dijon
2. Adam
3. Alba Rosca
4. Devoniensis
5. Le Pactole
6. Madame Falcot
7. Madame Margottin
8. Madame Willermoz
9. Maréchal Niel
10. Niphetos
11. Souvenir d'un Ami
12. Céline Forestier

MR. R. W. PROCTOR, The Nurseries, Ashgate Road, Chesterfield.

1. Alfred Colomb
2. Baronne de Maynard
3. Charles Lefebvre
4. Comtesse de Chabillant
5. Comtesse d'Oxford
6. Duke of Edinburgh
7. John Hopper
8. Gloire de Dijon
9. La France
10. Mlle. Marie Rady
11. Prince Camille de Rohan
12. Sénateur Vaisse
13. Abbé Giraudier
14. Abel Grand
15. Anna Alexieff
16. Alexandrine Backmetoff
17. Beauty of Waltham
18. Madame Rothschild
19. Charles Wood
20. Duchesse d'Orleans
21. Deuil de Prince Albert
22. Emilie Hausburg
23. Eugène Appert
24. Exposition de Brie
25. Général Jacqueminot
26. Jean Lambert
27. Jules Margottin
28. Jean Bart
29. Madame Boll
30. Madame Clémence Joigneaux
31. Madame la Française
32. Madame Girodte
33. Madame Victor Verdier
34. Madame Wm. Paul
35. Maréchal Niel
36. Mlle. Bonnaire
37. Mlle. Marguerite Dombrain
38. Marquise de Mortemart
39. Marie Baumann
40. Pierre Notting
41. Paul Ricaut
42. Rev. H. H. Dombrain
43. Souvenir de la Malmaison
44. Souvenir de la Reine de l'Angleterre
45. Victor Verdier
46. William Griffiths
47. Xavier Olibo
48. Empereur de Maroc
49. Fisher Holmes
50. Peter Lawson

MR. KIRK ALLEN, The Nurseries, Brampton, Huntingdon.

LIST OF TEAS AND NOISSETTES.

1. Maréchal Niel
2. Gloire de Dijon
3. Souvenir d'un Ami
4. Céline Forestier
5. Niphetos
6. Triomphe de Rennes
7. Devoniensis
8. Madame Bravy
9. Madame Willermoz
10. Souvenir d'Elise
11. Madame Margottin
12. President

P.S.—When writing about the new Roses, I am made to say Madame Bellon, Belle Lyonnaise, &c. By some error Belle Lyonnaise has been printed instead of Lyonnais, Lyonnais, or Lyonnaise, as three different catalogues name it, one of the recent introductions, and apparently one of the promising Roses.—J. HINTON.

TOXICOPHLEA SPECTABILIS.

THIS beautiful plant has been introduced into cultivation by Mr. B. S. Williams, of the Victoria Nursery, Upper Holloway. Mr. Williams tells us that the plants which have flowered with him and been exhibited this spring were recently imported, and consequently had not made the long growths which they would have done when unchecked during the growing season, and as a result they have not produced such long racemes of bloom as they will ultimately form.

The genus *Toxicophleæa* is placed by Lindley in the section *Carissææ* of the order *Apocynaceæ*, and next to *Carissa*, into which genus it appears to be the opinion of Professor Dyer it will be ultimately merged; this, however, will not affect the plant in a horticultural point of view—the light in which I shall here look upon it. *Toxicophleæa spectabilis* is a plant that should be grown by every lover of plants possessing an intermediate house or warm greenhouse. It is a handsome shrubby plant, furnished with dark green leathery leaves, which

have a somewhat polished appearance on the upper side, but are dull beneath; they measure nearly 4 inches long by about 2 inches in breadth, and are opposite, elliptic, becoming suddenly acuminate at the apex, with undulated margins. The flowers are tubular, with a spreading five-lobed limb, pure white, sweet-scented, and produced in dense cymes both terminal and in the axils of the leaves. When the plants grow freely they will produce racemes of flowers upwards of a foot in length.

In a cultural point of view this plant offers no difficulty to the amateur. It does not require a very strong heat, but, as before remarked, it succeeds well in an intermediate house. The pots in which the plants are grown should be thoroughly well drained; by which, however, let my readers understand I do not so much mean using a great quantity of material as the proper disposition of a moderate quantity; and let some such material as turfy peat or sphagnum moss be used to prevent the soil mixing with and thus choking it. The soil in which the plant appears to thrive is a mixture of peat, loam, and leaf mould, with a liberal addition of sharp sand. During the growing season it enjoys copious waterings both from the pot and syringe, but on account of the leathery substance of the leaves, little shade will be necessary during winter. The plants should by no means be allowed to suffer from want of water, as this will cause the leaves to fall off, and thus the specimen will be disfigured. The habit of the plant is such that very little pruning will be necessary, but should it require to be pruned to bring it into shape, this should be done immediately after the flowers have fallen. The flowering season is usually during early spring, but it may easily be retarded by putting the plants into the greenhouse during the autumn and winter months, when it will prove a most valuable subject for public exhibition.—EXPERTO CREDE.

THE ARECAS.

OF the many beautiful and interesting plants included in the wide-spread family of Palms, the *Areca*s seem to be particularly worthy of mention. The most striking feature about them is their foliage. This is composed of a number of large pinnated leaves sometimes called fronds, the bases of which are very much expanded, and firmly embrace one another so as to form a long compact sheath. Springing from this sheath, which affords them a becoming and necessary support, the leaves fall gently outwards, where they droop in languid gracefulness, as if exhausted by the effect of the intense heat to which they are naturally exposed. How sweet the rustling of their leaves in the evening breeze must be to the enervated native who lies beneath their shade when the sultry tropical sun has declined, we can form a faint idea from the pleasure we feel when placed in the same condition under some of our own forest trees in a hot day during July or August. Their stems, like those of most monocotyledonous plants, do not attain a very great thickness, though they are, as a rule, proportionate to the foliage; whilst the increase of them in height can be measured by the succeeding circles of leaf-scars left by former generations of leaves, which extend as far as the base of the sheath. Immediately beneath this is produced the inflorescence. It consists of two smooth, much-branching, waxen-looking spadices, one of which is generally set a leaf-scar higher than the other, and both occupying different positions with respect to each other in different plants. On them the male and female organs are borne, one of the latter being between two of the former. The male flowers fall off after having shed their pollen, and leave the fertile flowers to perfect their fruit. Many Palms produce fertile, unfertile, and perfect flowers in one inflorescence, and to this arrangement some *Areca*s show a tendency, their male organs often having a rudimentary pistil in the centre. The two spadices are enclosed by spathes, which are usually double, in some cases large and broad, in others long and narrow. The fruit is, botanically speaking, a drupe like that of the Plum, but the outer coatings are of a fibrous or leathery nature and not a succulent one. The seed or nut is frequently marked with red tracings on the outside and red veinings on the inside, when botanists call it "ruminated."

Notable among the various species of *Areca*s is *A. Catechu*, which yields the narcotic for which the natives of India show such a slavish liking. This is contained in the well-known "Betel," and, sooner than want it, the native chewer will forego the more ordinary and more essential articles of food. The Betel nut is the seed of *A. Catechu*, and of about the

same size as a nutmeg, being, like it, mottled or "ruminated." The equipment of a betel-chewer is a store of nuts, a box of lime-paste, a pair of nippers, and some leaves of the *Chavica Betel*, a Piperaceous plant. The much-prized quid is composed of some slices of the nut smeared over with lime-paste, and then wrapped-up in the leaves of the *Chavica*. The effect of this preparation on being chewed is to turn the saliva and the interior of the mouth and jaws red, as well as the outer coatings of the alimentary ducts. The misery to be undergone by the native aspirant for manly honours far exceeds that which the European youth, who is ambitious of smoking a pipe or a fragrant cigar, experiences. Intense giddiness, ulcerated throat, and loss of taste, result from an attempt at the practice, and should it be persisted in and a man succeed in becoming a confirmed chewer, the loss of his teeth before he has attained middle age is the fitting reward of his infatuation. All these effects, however, are said not to be due to the nut itself, but to the leaves in which it is enclosed.

In defence of this baneful and unclean propensity an excuse that the practisers of it never suffer from fevers and dysentery has been put forward, and also that it excites digestion; but when one considers that perpetual excitement of any organ destroys its delicacy, and chewing to the extent that many do must be constantly maintaining this excitement, the last plea may be very fairly transferred to the list of disadvantages. Those who have heard the arguments of immoderate smokers will be able to estimate the worth of these statements aright. On the whole, after weighing the advantages and disadvantages, it seems probable that the above are merely fictitious or fanciful assertions raked up in support of a disgusting habit, the injuriousness of which its slave is half inclined to admit, but the seductiveness of which is too great to allow him to renounce it after having said so.

The nut of *A. Catechu* contains a large quantity of gallic acid and tannin, and on account of this latter property is sometimes used in India for dyeing clothes. Its flowers are also employed for purposes of decoration on festival occasions in Borneo, as an ingredient of medicines, and as charms. A kind of *Catechu*, an astringent extract used in cases of internal relaxation and irritation, is prepared by evaporating a decoction of the nuts. On the western coast of Hindustan the natives use the nut of *A. Dicksonii* as a substitute for the true *Betel* nut, which they are unable to obtain.

Another species of this genus is the *Areca oleracea* or Cabbage Palm. It is a native of the West Indies, where it grows to a height varying from 100 to 150 feet. It is a very handsome plant, and much esteemed by the natives on account of producing the two delicacies to which we shall afterwards refer; but it is also valuable for the economical properties. The fibrous parts of the macerated leaves serve to form cordage for all kinds of purposes; the outer skin on the inside of the main leafstalks is, when dried, a very good substitute for paper; and the enormous sheaths of the fronds, which completely embrace the stem, are used by the native women as cradles in which to rock their babies. The terminal bud, however, is the great point of interest to the native epicure. It lies in the centre of the crest of leaves, and consists of snow-white brittle flakes, which are the leaves in a very young and compressed state. It is called "the Cabbage," and as such is boiled and eaten. In flavour it is said not to be unlike the Almond. The removal of this bud causes the destruction of the plant, but the owner is not distressed on that account, as, in a dead condition, besides yielding much useful material in the shape of fibre and laths, its pith supplies a sort of sago, and the hard exterior of the stem forms spouting. Besides, in the decaying hollow made by the extraction of the bud a beetle lays its eggs, which, on being hatched, give birth to a maggot, held by native gourmands to be superior to "the Cabbage" itself. These are called in the dialect of the country *groe-groe*, are in size about equal to a man's thumb, and very fat. They are a recognised article of barter, and are sold regularly at the market of Paramaribo, in Surinam. The way of cooking them is as follows: They are strung on a skewer, and hung before a fire, sprinkled with bread crumbs, pepper, salt, and nutmeg in order to absorb the fat, and then served-up with orange and citron sauce.

Areca Baueri is a native of Norfolk Island. *A. sapida* is a New Zealand species, inhabiting the northern and centre islands. Its bud is also eaten by the natives as a vegetable.

THE PERSIAN ROSE.—I do not know whether any of your readers have remarked that the scent of none of our Roses

resembles the otto. In India a variety is cultivated under the name of the Persian Rose, which has the otto perfume. If introduced here it would gratify those old-fashioned people who still think that a Rose ought to smell sweet.—G. S.

GARDENERS' SELF-IMPROVEMENT.

LITTLE if at all inferior in value to drawing is a knowledge of mensuration to gardeners. The gardener, if able to draw plans ground or structural, should be able to measure the ground on which they are to be carried out, to measure and find the contents of all superficieses and solids usually measured, or those connected with gardening, and have a sufficient knowledge of land-surveying to enable him to give a sketch or plan to scale of any part or the whole of the grounds under his charge.

The learner I shall presume to have received an average education, and to be well acquainted with arithmetic, including vulgar and decimal fractions, duodecimals, square and cube roots, which are essential for learning mensuration. If so unfortunate as to possess a small part of arithmetical knowledge, but in full possession of a desire to learn, the way is clear and not paved with so much difficulty as many imagine; or, if, as is not unlikely, the arithmetic previously learned has escaped the memory, it will be necessary in either case to provide a book on arithmetic, of which there are now so many that it would be difficult to say which is the best; and I would advise the learner to provide himself with the key as well. The mastery of arithmetic, if not previously acquired, will take up some time; but a sound practical arithmetical knowledge is required for the satisfactory working of mensuration; besides, arithmetical knowledge is of great value in itself, and ought to be possessed by every one.

Mensuration is an art of the greatest general utility, and for acquiring it I know of no better work than Nesbit's; and if the student has no previous knowledge of figures this treatise affords examples of forming them. It is equally important that the student should know how to form the figures, and know what they are, as it is to be able to measure them.

Nesbit's "Mensuration" treats in the first part of practical geometry and some geometrical theorems; the second part gives the mensuration of superficieses, or the method of measuring everything with length and breadth only. This will enable the gardener to ascertain the area of any plane figure, to tell the number of plants required to plant a given figure, calculate the cost of digging, walk-forming, and the like. Part 3 treats of land-surveying, gives the methods of surveying and planning single fields, woods, roads; also surveying a number of fields, &c.; instructions for parting-off or dividing land, by which a gardener will be able to measure land, and to give a plan to a scale; also to divide or part-off land for alterations.

The methods of finding the contents of solids forms the fourth part, and includes timber measurement, which, though appertaining to the forester's art, may be of use to a gardener, for there are situations where the offices of gardener and forester are merged in one.

Part 5 treats of the method of measuring the work of artificers, as masons, bricklayers, carpenters and joiners, slaters and tilers, plasterers, painters, glaziers, plumbers, and paviors: the value of this must be manifest. Part 6 treats of how to measure haystacks (many gardeners are bailiffs), drains, canals, marlpits, embankments, ponds, mill-dams, quarries, coal-heaps, clay-heaps. Part 7 treats of conic sections and solids, some part of which may be useful. Part 8 displays the method of gauging, which may also be found useful. Part 9 treats of plane trigonometry; and in Part 10 we have the application of trigonometry to height and distances, and some instructions on levelling that will be of use in ascertaining the height of trees, whilst the value of levelling is patent to most.

I have given this brief outline of Nesbit's "Mensuration," not that I think it the only treatise that is suited to give a sound practical knowledge of mensuration, but to enable those desirous to learn what is needful for them, and what a book they invest in will afford them for their money, knowing, as I know, that young gardeners as a rule have but little to spare. I would just hint that those who have not been in the habit of giving their leisure to this and similar means of acquiring knowledge, spending it as many do in those pastimes and amusements that may dazzle and endure for a time but never enlighten, will find by giving them up that they can spare more than they anticipated, and will not only be able to lay-

in a stock of materials for drawing and mensuration, but have a store to fall back upon when a "rainy day" comes, as, rest assured, it will; and depend upon it, none pass through a "rainy" period so well as those who have made the most of sunshine.

I ought to say that if the self-instructor be not so situated as to avail himself of a teacher he should provide himself with a key to the treatise, so that he may pursue his studies with success, which is insured in this, as in everything else, only by diligence and perseverance.—G. ABBEY.

DECISIONS OF ROYAL HORTICULTURAL SOCIETY'S FRUIT AND VEGETABLE COMMITTEE.

EMERALD GEM PEA.

As Messrs. Suttons' communication (page 496) acquires importance from its place in your columns, perhaps you will allow me in my individual capacity, and not as Chairman of the Royal Horticultural Society's Fruit Committee, to make one or two remarks upon it.

Messrs. Sutton appear to think that the Committee can be improperly influenced in its decisions by its seedsmen members, and to be unaware that its varied composition, consisting of gentlemen's gardeners, seedsmen, nurserymen, fruit-growers, doctors, and clergymen, makes this impossible. In the immediate case, the Pea trials at Chiswick, no member knew what or whose Peas he was considering until judgment had been given. I have more than once heard a grower denounce what, on reference to the register, proved to be his own Pea.

Having served on several of the exhibition juries, and therefore having seen something of the working of similar mixed judicial bodies, I may perhaps be allowed to speak to the care taken in, and absolute fairness of, the decisions of the Fruit and Vegetable Committee.—GEORGE F. WILSON.

WIND AND GLASS.

On the evening of the 8th and morning of the 9th inst. we had a greater hurricane than we have experienced in this neighbourhood for thirty years. Some fine old trees have been torn up by the roots, and others have lost some of their principal branches; a few have been broken where the roots were too firm and extended to yield. In the garden our chief loss was half a score squares of glass blown out of the orchard house; and as the weather would not permit of fresh squares being put in, the openings were filled up with sacking, cloth, &c., to keep the wind from getting into the house. We glazed these houses in the simplest and cheapest manner; but if we were doing more, if we had not leave from a patentee to fasten with non-conducting material, we would make the panes slide in grooves and have a uniform plane. With the grooves deep enough there would be plenty of room for side expansion, and any light matter for packing would hold the glass firm without puttying. Ours are putted in the usual way, and when the putty cracks and splinters, and there is such a hurricane as on the night of the 8th, or even a fierce gale, we are afraid of the wind finding its way into those houses, for a fierce rush would be apt to send a lot of squares wandering. We have had little of this as yet, but the houses have required much watching, and if ever a square was blown out the hole was filled at once with something to keep the wind out. Doors, too, had to be made secure by pinning. When wind is expected we cannot sleep soundly if all steep sashes on roofs, and sashes fully exposed on pits and frames, are not securely pinned by fixing a pointed wedge-like stick firmly between the rafter and sash. In our corridors, conservatory, &c., all doors and large upright sashes were thus securely fixed, the doors having a tapered wedge driven in at the bottom between the door and the stone floor, and in extra cases a good strong tally, neatly pointed, driven in between two folding doors halfway up the height.

All these little matters are easily done, take up but little time, and in our high exposed place are absolutely necessary to prevent breakages and smashings from high winds. As a case in point, we may mention that years ago of two folding doors in the centre of a conservatory, the doors facing the south, one of these doors was wedged securely at the bottom, but the man to whom the work was entrusted having latched, locked, and bolted the other door to its neighbour, imagined that that would make all secure. The early morning told a different tale—latch, bolt, and lock were set at defiance by a southern gale. Some of the wood of the unwedged door was broken to splinters, and as more than three-fourths of it was glass, every square was smashed to pieces. Such a fact should carry its own teaching with it. A little in the way of prevention may often save a great deal of useless regrets. Many a sash is blown off in a

gale that would have been perfectly safe if a little wooden-wedge pinning had been resorted to.

Many years ago a very singular thing happened with a large sash of a Peach house, a lean-to, facing the south, the roof in its slope consisting of two moveable sashes in the old-fashioned way, when exposed before the spring equinox to a strong westerly gale that uprooted some of our trees. Dreading what the effects might be, we got up early that morning, and the lantern we carried showed us something shining and glittering on the walk 50 feet eastward from the Peach house, and this glittering thing proved to be one of the long sashes that had first been blown off and then carried by the wind to that distance; but the marvel was that the sash lay along the middle of the walk, and not a single square of glass was broken or even cracked. But for the facts that we had locked all the doors ourselves, no one else had then a key, and no one then lived on the premises, we might have thought that the light had been carefully taken off on purpose. A close examination of the ground, however, showed the erratic course of the light, where one end or one side had ploughed the soft ground without the least mark of a footstep. The sash on the house had its ends north and south, it had made several gyrations from the marks on the ground, and ultimately at the stated distance from the Peach house its ends reposed on the walk standing east and west. Once again, on a stormy night, from insecure pinning, either the same or a similar sash was blown off, but that did not travel a third of the distance, but every square was smashed. A little pinning, even if the pins are not larger than fair-sized 6-inch tallies, will often make all the difference between security and breakage.—R. F.

GLOIRE DE DIJON ROSE.

I HAVE carefully read the interesting paper by Mr. R. W. Beachey (see pages 461, 462), and I confess I am utterly unable to understand why he should give Gloire de Dijon the preference to every other Rose. I admit that it possesses every good property that is desirable, with the exception of colour, and there I think his tabular scale is too limited to do justice. If Gloire de Dijon deserves three marks, Maréchal Niel deserves six, yet the latter had six marks less than Gloire de Dijon, and only one more than Céline Forestier, a Rose next to worthless! With us, again, Maréchal Niel possesses every good property in common with Gloire de Dijon, with one exception—want of hardiness. I was also surprised to find omitted from the first twelve an old and never-failing favourite, Sénateur Vaisse. I know of no Hybrid Perpetual that deserves a more honourable position in any list of Roses than this, which is to be preferred to Comtesse d'Oxford. The latter with us produced deformed flowers; and I might with equal justice name others, but upon the whole the list is a good one, and Mr. Beachey deserves the thanks of all Rose-growers. I trust that you will encourage the dissemination of the opinions of different Rose-growers, as they are always interesting, and useful knowledge is so obtained.—S. EYRE.

INFLUENCE OF THE ALDER UPON THE SOIL.

LOUDON, in his "Arboretum Britannicum," referring to the notion that the Alder makes the ground about it boggy, expresses some doubt as to its correctness. I do not know whether he changed his opinion subsequently; the fact is certainly as stated by Selby, who rightly attributes it to the capillary attraction exerted by the extensive roots this tree makes. An illustration of it may be seen on Wimbledon Common, where in one of the hollows are scattered bushes of the Alder. Before we were acquainted with this property of the tree, a friend and myself used to be greatly puzzled how it was that on a bit of sloping ground there were more "plashes" of water near the top than at the bottom, though there was seemingly no obstacle to prevent its finding its level. These boggy places are due to the influence of the Alders, as I now perceive. Yet, when growing on the banks of streams, this tree does not seem to sodden the soil, indeed, it rather tends to give it solidity; the roots, I presume, striking thus upon a source whence water can always be had, do not need to accumulate a store about them.—J. R. S. C.

VISIT OF THE PRINCE AND PRINCESS OF WALES TO DERBY.—Mr. Cooling, of the Mile Ash Nurseries, supplied the bouquet which was presented to the Princess by the Mayoress. It consisted of the rarest and most beautiful flowers in cultivation, and was most elegantly arranged. The groundwork consisted of choice Orchids, including *Dendrobium nobile* and monili-

forme, *Calanthe vestita rubra*, *Cypripediums*, *Oncidiums*, &c., filled-in with red and white *Camellias*, *Heaths*, *Violets*, red white, and yellow *Roses*, *Daphne indica alba*, *Azaleas*, *Mignonne*, *Jasminum Sambac*, *Double Primulas*, &c., the whole edged with the brilliant scarlet *Poinsettia*, which, lying on a margin of softest green, composed of *Adiantum farleyense* and *Gleichenia spelunca*, had a beautiful effect. The border was of Brussels point lace of an elegant and costly pattern, and the back was formed of tulle and white satin, corded with silk, and richly ornamented with gold fasteners. The floral decorations of the Royal reception and retiring rooms were also entrusted to Mr. Cooling, whose ample resources and well-known taste produced an effect at once rich and charming. We do not remember to have seen anything more chaste than the arrangement of the three epergues with flowers and Ferns. A large jardinet with a mirror at back filled with choice *Dracenas*, *Heaths*, *Adiantums*, *Poinsettias*, &c., added greatly to the appearance of the room, and various ornamental stands were occupied by specimen plants in China vases. The whole of the floral decorations at the Infirmary were by Mr. Cooling. Many hundred fine plants were used, and the effect was very good.

NOTES ON DENDROBIUM.—No. 3.

Dendrobium Lowii, from Borneo, is one of the rarest as well as one of the most curious and interesting species. In growth it somewhat resembles *D. longicornu*, although quite distinct. The stems are erect, about 12 inches high, and, together with the leaves, covered with minute black hairs, which give the whole a very dark green appearance. The flowers are produced near the top of the growth, and are of a bright yellow, with red markings on the upper portion of the lip, which, like the stem, is furnished with small hairs; these are red at the base, passing to yellow at their tops. The spur resembles that of a common garden *Nasturtium*. Altogether it is a peculiar, remarkable, and desirable species, which should be placed in all good collections, but it is difficult to obtain.

D. chrysotis, from Assam, is an extremely showy and attractive species, with pendant growths from 3 to 4 feet long. It has a close resemblance to *D. fimbriatum*, although a decided rival to that variety. The flowers are produced in racemes of seven, eight, or more on its leafy rod-like stems, and measure about 2 inches across. They are of a rich deep yellow; the lip has two dark blotches at the base, and the margins are beautifully fringed. A splendid specimen of this flowered a short time ago in the rich collection of exotics at Manley Hall, Manchester. To show the flowers to perfection, it should be grown in a hanging pan or basket.

D. crassinode, from Moulmein, is a very distinct species, having stout upright growths from 6 inches to 2 feet long, furnished with knotted joints or nodes, from which it takes its name. The flowers are produced from these nodes, are about 2 inches in diameter, pure white tipped with purple, the lip having a rich orange centre. It is said to be found growing on trees at an elevation of 2500 feet, where the moisture is considerable. It blooms during the summer months, lasting a considerable time in perfection.

D. Dathousianum, from India, is a most beautiful evergreen species, the noble growths often attaining the length of 7 or 8 feet. It produces its pale lemon-coloured flowers from the old growths in the early part of summer; the lip has a pink margin, with two dark crimson spots in the centre. Specimens of this are extremely beautiful when in flower, and make fine exhibition plants. At Blackburn during the past year Mr. Varley, gardener to Capt. Shaw of that place, exhibited a specimen with 440 blooms each $4\frac{1}{2}$ inches in diameter, several racemes bearing as many as fourteen flowers. Such specimens as that here referred to are, however, scarce.

D. infundibulum, from Moulmein, is one of very diminutive size as compared to the foregoing, although not of less beauty. It is somewhat allied to *D. formosum*, but rivals it in splendour. The stems are slender and erect, from 1 to 2 feet long, the flowers being produced from near the top on the old as well as on the present year's growths, in colour ivory white. The petals are broad, with prominent veinous markings, which give them a great resemblance to the wing of a white butterfly, the lip having a yellow blotch; this, together with the tapering funnel-shaped spur, renders it an extremely interesting species. Many people do not succeed well in its culture. At Ferniehurst, in a cool house, it grows vigorously suspended from the roof in a hanging basket filled with good fibrous peat, sphagnum moss, and a free admixture of sand. Last summer it

produced as many as eleven flowers at one time; and the fact of their lasting in perfection for six weeks or even more, greatly enhances its value.

D. formosum giganteum.—This splendid variety is somewhat similar to the above, except that it is stouter and more robust in growth. The flowers last in beauty about the same time. It is very desirable.

D. longicornu, India. Of this there are two varieties, the best, perhaps, being *majus*. It is not quite so strong in growth as the last-named. Its flowers, however, are produced from the tops of the growths, which are white, the lip having a yellow centre, and also being fringed. It blooms about June, and if placed in a cool house will last a considerable time in perfection.

D. transparens, India. This is a splendid species, having so soft and delicate an appearance that it cannot fail to prove a general favourite. It is somewhat sub-erect, and the flowers



Dendrobium transparens.

are produced in pairs nearly the whole of its length; they are rather small, of a pinkish lilac colour, the lip stained with a deep blotch of crimson. It blooms during the summer months, and succeeds well in a hanging pan.

D. albo-sanguineum, Moulmein.—This is a very compact and lovely species, growing about 1 foot high. The flowers are produced from near the top, creamy white, broken with markings of pink, the lip having a crimson blotch in the centre. It is a very distinct and beautiful Orchid, and, like the last, is best grown in a hanging pan, where it will require an abundant supply of moisture during the growing season. It blooms during summer, and lasts for some time in perfection.

D. chrysanthum, India.—It is almost impossible to imagine a plant more chaste and elegant in appearance than this when in flower. It is a strong and robust grower, producing pendulous growths usually about 3 or 4 feet long, although under liberal treatment it will often attain the length of 5 or 6 feet, producing its rich golden yellow flowers for about two-thirds its length, having in some cases as many as eighty blooms on one growth, which, being backed with dark green foliage, present a very pleasing appearance. It is one of the oldest and also one of the most attractive *Dendrobes* we have. As soon as the flowers fade it commences to show signs of activity, when it should be placed in the warm house, and have a plentiful supply of water till growth is completed; it may then be removed to a cooler temperature to produce its lovely blooms, which it will do about July or August.—C. J. WHITE.

CAMELLIAS FOR AUTUMN FLOWERING.

EXCEPTING in gardens where there are large and varied collections of plants, there is a certain interval of time in autumn when the gardener finds greater difficulty than at any other time to meet successfully a large demand for flowering plants and cut flowers. This interval generally extends from the first

sharp frost of October, which cuts down the greater part of out-door bloom, till the beginning of December. It is during this interval that flowers of almost any description are, if not the most acceptable, used with the greatest economy. In gardens with limited collections of plants, scraps of bloom that at other seasons would be overlooked are, from the middle of October till the end of November, carefully culled and cherished. Blooming plants of standard character and beauty are then most esteemed, not only for their own intrinsic beauty, but because of the comparative scarcity of flowers however humble.

It is a wonder and a pity that so tractable and splendid a flower as the Camellia has not been more generally coaxed into bloom at the season to which we have referred. Every one admits its splendour further on in the season, even where it has to compete with many rival flowers, and yet claim the place of honour. Camellias in full bloom are rarely met with in October and November. The—in a certain sense correct—idea that Camellias will not submit to be forced, no doubt to some extent accounts for this. They certainly will not do very well to be forced to open their blooms hurriedly in autumn. But the same applies with considerable force to the Azalea and other flowering plants not properly prepared for autumn blooming. If Azaleas have not been made to have prominent bloom-buds and well-matured wood by August, they will, when put into heat early in October, commence to grow afresh, instead of opening their blooms. Yet when properly prepared they come into bloom with comparatively little forcing, and at this dull season they, too, are much to be recommended. These remarks apply with more force to the Camellia, though it is rarely met with in bloom till December.

We venture to think that any person who early in October would place a large plant of the Double White Camellia on an exhibition table would receive a meritorious award for so unusual and unseasonable a production. We have not heard of such an example of Camellia culture more than once or twice. This is all the more strange, seeing how much appreciated the Camellia is at all times, and considering how easily its early blooming can be brought about when the forcing of it is practised at the right end of the year. It is only necessary to put the plants into heat in February, and to remember that, during its growing season, the Camellia is subject in its native country to a heat almost equal to that of Bengal, and acting accordingly, subject it to stove temperature, with a corresponding amount of moisture both in the soil and in the air, and to prolong such conditions until the wood is firm and the bloom-buds prominent. Then, without sudden checks, gradually withdraw the heat and moisture to supplies that are just necessary to keep the system of the plants healthy, but for the time being quiet. This, it may be said, is the usual routine of Camellia culture; and so it is. But to bloom Camellias at the time now referred to, it begins two or three months too late, and does not continue sufficiently long after it is commenced.

When caused to make their wood and bloom-buds thus early and prominent, there is absolutely no forcing required in October. And this is just the difficulty to be got over; for to force Camellias hurriedly to open their blooms by fire heat, causes many of the buds to drop, produces those that do open of poor quality, and forces the wood buds prematurely into growth. From our own experience, we are almost certain that anyone who once gets a fine bloom of Camellias in October and November, will come to the conclusion that at no other time are they so splendidly pure in colour, at no other time do they last so long in perfection, or are so much appreciated. At any time Camellias will always hold a high position as flowers, but after the period named they have more rivals. In frosty weather at midwinter, when more fire heat has to be applied to keep frosts from a general collection of greenhouse plants, with which Camellias are in the majority of places classed, Camellia flowers do not last nearly so long without dropping as they do in an atmosphere that is cool and kept moderately dry, with a minimum of fire heat. Like most blooms they dislike a damp stagnant atmosphere, and the drier air-currents of February and March are equally unfavourable to them.

These remarks have not been made by way of depreciating the Camellia at any season, but with the view of inducing those who have not tried to bloom a portion of their stock in autumn to do so, feeling sure that if they once get a good crop of Double Whites and Imbricatas in October they will never wish to be without them again. At this season they are most valuable for table decoration, and for almost every purpose to which cut flowers are applied. Their effect in the conservatory

at so dull a season is more striking and lasting than at any other time.—(The Gardener.)

LAND DRAINAGE.

IN new work drainage ought to be the first consideration. Where turf can be had and is placed grass side downwards, so as to leave a little space between the drain and the turf, it is very desirable for covering the drains. Any covering of small stones with a sprinkling of finer material over them, as gravel with the finer portion washed or sifted out of it, will enable the drain to run clearly for many years.

A drain of any kind is better than none. I have had drains made of brushwood, Thorn faggots, &c., and they answered well for years, and might have continued to do so much longer if I could have dispensed with an outlet, or so managed the outlet by trapping that the external air could not have free access to the drain, as air, heat, and moisture soon rotted the faggots; and as these decayed the drain gradually became stopped up. I cannot tell how long faggots would last if so covered up that air could not reach them. Some were dug out that had been used to good purpose for bottoming a marshy piece of road, and after doing service in making a good road for thirty years; they were more firmly wedged together by the superincumbent weight, but seemed as fresh as ever—not a sign of decay or rottenness. They had a thin covering of clay before the gravel and stones were placed over them.

Rough stones neatly piled make a good drain, the smaller stones being uppermost. Some of these I have been assured have run well for forty years; and one advantage of their use is that they give refuge to few vermin, or only to the smallest. None of these methods, however, will be found so good as 2 or 3-inch pipes. I wish to bring before your readers for discussion, correction, or confirmation, two matters: the first is, the fall of drains. I used to think the greater the fall to the outlet the better, but I now consider that for effectual draining the fall may easily be too great. I have been assured that a fall of 3 inches or even less in 100 feet, will drain the land better, that there will be a more uniform flow, and that the drains will keep sound and effective longer, than when there is twice or thrice that amount of fall. I should certainly like more than 2 inches' fall if it could be obtained. What do your experienced readers say to this? Simple though the matter appears, it is most important.

Then, again, I am satisfied that it is not every soil—no, not even a stiff loam with a seemingly clay bottom, that will be improved by drainage. I have drained such land from 2 to 3½ feet deep, deeper towards the outlet, and the drains flowed freely after much rain. I have drained other soil as much alike as possible, and but seldom had the smallest outflow of water from the drains. This puzzled me very much; but I imagined I discovered the cause when, on finding different colours and different degrees of compactness in the clay, and testing these with acids, I found that the clay was permeated liberally by veins of marl. Draining such ground was therefore almost as useful as draining soil that lay on a thick bed of open chalk. What was wanted in such stiffish land was deepening the staple, by breaking-up the under strata by trenching and picking, if even the under strata were left at the bottom after moving. This would allow the surplus moisture to descend more freely. I also noticed that in such ground, where the superfluous moisture found a way for itself naturally, the crops stood dry summers better than on the well-drained land. I presume the heat of the sun brought a part of the moisture back again, and that the roots obtained a share of it as it passed them. I throw out these hints for consideration, as all that I have done in draining has been on a small scale. Meanwhile I would suggest to your readers, that before they become acquainted with the true nature of their soil, and before they expend much money on pipes and earthwork, it would be well to dig a number of holes 3 feet deep. If no water stands in these holes they may well doubt if that land will be improved by draining.—R. FISH.

DANGSTEIN.—No. 1.

THE RESIDENCE OF REGINALD H. NEVILL, ESQ.

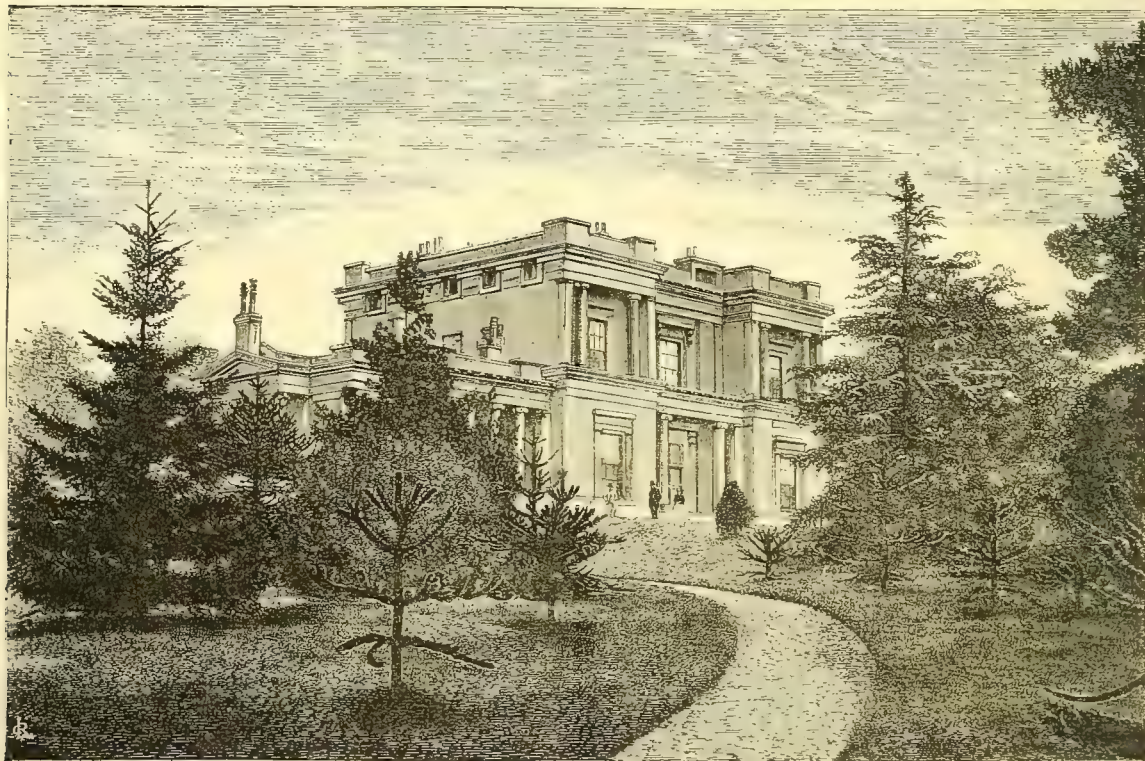
THE fame of Dangstein, in a horticultural point of view, rests not on the extent of its pleasure grounds, not on flower gardens in which thousands of brilliant-coloured bedding plants dazzle the eye in the summer months, not on its architectural embellishments and the work of the sculptor's hands,

but on its rich collection of plants, which, for rarity, number, and diversity, is, we should think, scarcely equalled by any private collection in this country. All parts of the world have been laid under contribution to increase its stores, and it may fairly be said that Mr. and Lady Dorothy Nevill possess representatives of nearly every ornamental stove and greenhouse plant worth growing.

In making these preliminary remarks, however, we have in some measure anticipated, for it ought to have been stated that Dangstein is situated on the borders of Sussex and Hants, about six miles from Petersfield, and between three and four miles from Liss station on the Portsmouth Direct line, whence a nearly straight road leads across a heath of several hundreds of acres, and passes close to Dangstein, which lies on the right. The mansion occupies an elevated position, and, as will be perceived by the accompanying engraving, is in the Grecian style of architecture, with Ionic columns. The principal entrance is on the north side. South-

wards and westwards there are fine views, embracing the South Downs and Hampshire hills, and northwards the Surrey hills, whilst wild and woodland scenery is diversified by wide stretches of cultivated land. On the southern front of the house there is a broad well-kept lawn, and more to the westward a pinetum (a portion of which is seen in our view of the mansion), containing many thriving specimens, though none of them are of remarkable dimensions; and on the west side there is a flower garden, in which pear-shaped and scroll beds form an agreeable combination.

Passing now to the houses, which are situated to the north of the house, we first entered a range of lean-to pits, 84 feet long by 12 feet wide. These are partly used for plant-growing and partly for vegetable-forcing. One was devoted to forcing Cucumbers, of which Sion House and Lord Kenyon's are preferred for winter, but Blue Gown and other kinds are likewise grown. We also noticed a large number of Ferns from Ceylon, some of which are expected to prove new, and a num-



Dangstein.—South-west front.

ber of plants from seed sent from the same island. Seedling plants of *Impatiens flaccida*, with pretty lilac flowers, were freely dotted about. The next compartment was chiefly occupied with Asparagus and Dwarf Kidney Beans, while the shelf at the back, as well as those in other houses, were filled with Strawberry plants. There is in these pits ample provision for both top and bottom heat, and in summer they are used for growing Melons and other purposes. Of Pines only a few are kept, and these more for curiosity than use; there are, however, several plants of the Variegated Pine Apple which are very useful for decorative purposes. In a bed in one of the compartments *Arachis hypogæa*, the Earth Nut, now so commonly met with in our markets, and so largely consumed by children, is successfully cultivated. As it may not be known to some, it may be remarked that in this South American plant, after the flowers fall the young pods are forced into the ground by the natural motion of the stalks, and are thus buried. At Dangstein these pods, or "nuts," are fully equal to the best of those to be found in the shops. Next in order was a Peach house, a lean-to, 28 feet long and 14 feet wide, with a curved trellis in front, on which are strong trees of Royal George and Noblesse Peaches and a Nectarine. The trees being at rest, the floor and every available space was oc-

cupied with bedding plants, and there was likewise a quantity of Mignonette. A Peach case the same height as the back wall of the Peach house, about 11½ feet, proves very useful in protecting a tree of the Royal George covering nearly 500 square feet of wall, as well as Endive and other salads. There were also trees of the *Ailantus glandulosa* for producing leaves for the Ailantus silkworm, in connection with which Lady Dorothy Nevill's name will be familiar to our readers as having placed its merits before the public, and both by precept and example done much to stimulate its cultivation in this country. The narrow Peach case just referred to is one of the simplest structures that can well be conceived, being formed, in fact, of sashes placed in front of the wall, so as to leave a width of 4½ feet at the base, and meeting the wall at an acute angle at the back. Inexpensive as it is, however, Mr. Vair, the gardener, thinks highly of its utility.

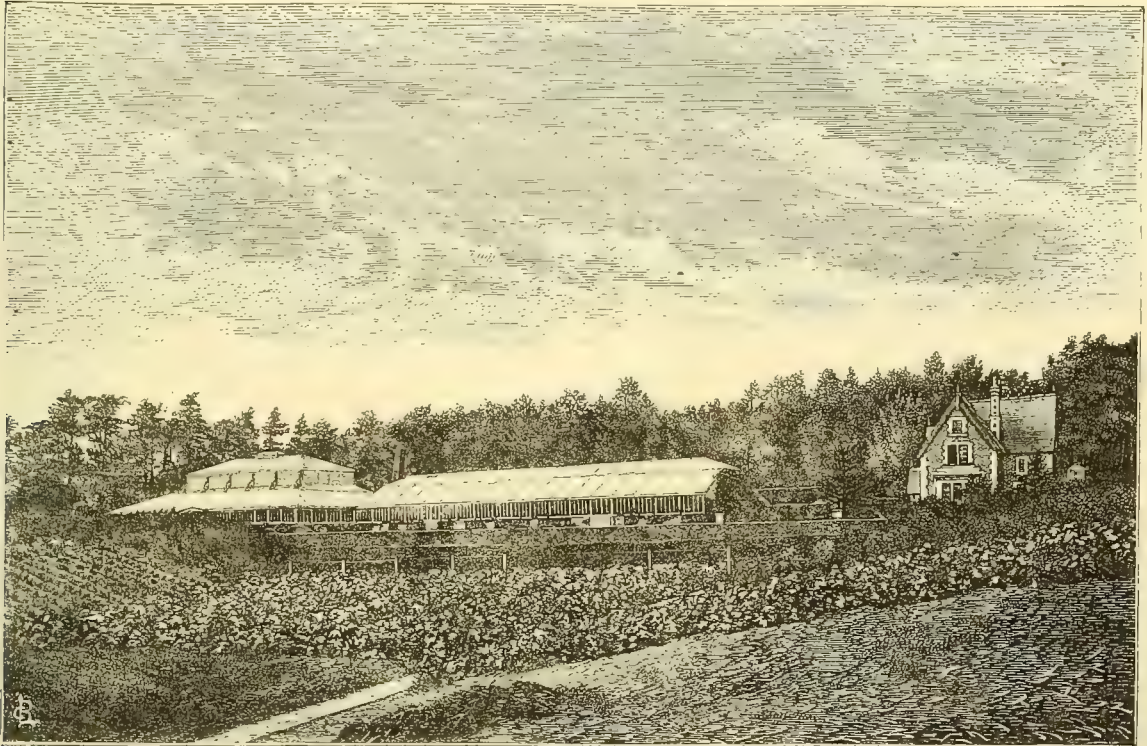
We now come to a range of lean-to vineries, three in number, 93 feet long, 14 feet wide, 13 feet high at back, and 6 feet 6 inches high in front. The latest contains Muscat of Alexandria, Black Muscat of Alexandria, Black Hamburg, Trebbiano, and others. All the Grapes had been cut, and the house was filled with bedding plants. The second vinery—chiefly planted with Black Hamburg and Alicante Vines—con-

tained also Fig trees in pots, which here, unlike many places, are well managed, besides Cinerarias, Chinese Primulas, and at this season the omnipresent bedding plants. In the earliest vinery (which will not be so next year), the Vines had been cut down to obtain new wood, Mr. Vair having found the advantage of a similar practice in the other houses in previous years. It must be added that the shelves in these and other houses were fully occupied with Strawberries, sometimes varied with flowering plants.

We now come to one of the great features of the place, the magnificent collection of Orchids, one of the finest in the country both in the number of the species and the size of the specimens. In the East India house, which is 22½ feet square, are several grand specimens of Vandas, especially *Vanda tricolor insignis* and *V. suavis*, *Aërides*, and *Saccolabiums* of all the best kinds in splendid condition, and many of them of a size rarely met with, together with *Phalenopsis*, *Angræcums*, and members of other genera too numerous to particularise.

Angræcum eburneum was showing flower, and so, too, was *A. sesquipedale*, the latter having two spikes, on one of which there were four flowers. Some of the Vandas and *Phalenopsis grandiflora* were also in flower, and the brilliant flower-heads of *Poinsettia pulcherrima*, plants of which were dotted about among the Orchids, combined to give the house a gaiety of appearance not seen in many places at this season. On the back wall are plants of *Vanilla lutescens* and *planifolia*—the former pods the more freely, and is preferred to the latter—also a fine specimen of *Platycerium grande* 5 feet in diameter. At the end of this house is another small house, forming a kind of lobby, which it was thought desirable to construct in consequence of the wind sweeping round a corner and robbing the East India house of its heat. A Lemon tree is trained at the back, and Orange trees at the side.

The cool Orchid house comes next; in this we noted *Odonotoglossum cariniferum*, *Lindleyanum*, *triumphans*, *grande*, *Bluntii*, *Dendrobium speciosum*, and numerous *Lycastes*. The



Dangstein.—Gardener's Residence and Plant Houses.

plants here are nearly all grown in pots with troughed rims to receive a bell-glass, and when the trough is filled with water it serves as a barrier to the passage of many insects, and in summer for the evaporation of moisture. There is in this house a very fine collection of *Sarracenias*, comprising *Drummondii*, *Drummondii alba*, *flava*, *psittacina*, *variolaris*, and *purpurea*; also many other curious plants, such as *Darlingtonia californica*, of which there were some three hundred seedling plants on a top shelf, *Cephalotus follicularis*, *Drosera dichotoma*, the rare *Drosophyllum lusitanicum*, and Venus's Fly-trap (*Dionæa muscipula*). Ornamental-leaved *Begonias* were ranged on each side of the central pathway, and a covering of *Lycopod* on the end wall had an excellent effect.

The principal Orchid house, however, is situated in the main range, and is a span-roofed structure 50 feet by 24. Here were *Cypripedium insigne* with thirty-six flowers, *C. longifolium* which is nearly always in bloom, *C. Dayanum*; *Lowii*, *Stoniei*, *caudatum*, and others of the same genus. *Calanthe Veitchii* was producing long spikes of its lovely blossoms; and though the plant had been divided, it was still very fine. *C. vestita* was also well represented in several varieties. *Peristeria elata* had formed an immense bulb and thrown up two spikes, each with three branches. One spike had been cut off

after flowering, but the other was still bearing several of those singular-shaped flowers which, from their resemblance to a dove, have given rise to the plant's scientific and popular names. The *Pleiones*, such as *Wallichi* and *maculata*, which have been aptly called the autumn Crocuses of the Orchids, had been very fine, and the *Dendrobiums* had made excellent growths; of these the species cultivated are too numerous to mention. *Lycaste Skinneri* in several varieties was in great force. We also noticed an importation from Ceylon, among which it is expected some novelties will be found. Altogether this house presented a striking appearance; the *Cypripediums*, *Calanthes*, *Dendrobies*, &c., furnishing an ample supply of bloom even without the *Poinsettias*, which had been introduced to give liveliness to the whole.

Passing back to another range, consisting of four low span-roofed houses, 103 feet long and 13½ wide, we find in the first of these a varied collection of fine-foliaged plants, including *Crotons*, *Marantas*, *Dracenas*, *Alocasias*, &c., of the best kinds, and flowering *Begonias*. The second division contains more fine-foliaged plants on one side, Ferns on the other. Among the latter were *Cionidium Moorei*, nice plants of *Drynaria musæfolia*, and fine specimens of *Davallia Mooreana*. *Anthurium Scherzerianum* (one of the most useful of stove plants in-

produced of late years, producing, as it does, its gorgeous Roman-standard-like spathes, it may almost be said, throughout the year) which appears at our spring, our summer, and our autumn exhibitions, and which is welcome at all alike, was still in its most splendid garb, relieving the preponderance of green. Several plants of *Psychotria cyanococca* assisted by their violet berries in securing the same result. A very good plant of *Cochlostema Jacobianum*, was also noticeable, though not in flower, also the rare *Lindsaea Lowii*. In the next division are tanks, one of which contains the Madagascar Lace Plant (*Ouvirandra fenestralis*), though not the fine specimen which was one of the sights of Dangstein some years back; another, *Nymphæas*, *Limnœcharis Plumieri*, and other aquatics, of which *N. dentata* was in flower. Various fine-foliaged plants, among we particularly noticed excellent examples of *Alocasia Lowii* and *Veitchii*; a number of Pitcher-plants intended to be trained to the roof; and *Platyteriums grande*, *Stemmaria*, and *alciorne*, constitute the chief of the other inmates of this division; whilst Gold and Silver *Gymnogrammas* are the main feature of the fourth compartment, in which, as well as in that just referred to, it may be mentioned in passing, there are two or three bell-glasses filled with some of the tiniest Ferns and other plants in the tiniest of pots.

At the end of the main range, at which we now arrive, there is a small house, about 12 feet square, through which we must pass on our way to the Orchid house, which has been already noticed. *Nidularium Innocenti*, *Tillandsia zonata*, and other singular Bromeliads attract attention, and would more were it not that the Orchids at once catch the eye.

Next to the Orchid house is an orchard house 45 feet long, with beds back and front, and a bed in the middle, in which are planted out Peaches, Nectarines, Apricots, and Plums. Vines cover the roof, and Vines are planted all round the central bed by the side of the path, forming a cordon. This house, besides yielding a good supply of fruit in summer, also contains a number of Orchids and other plants imported from Natal, *Leucocoryne ixiodes*, and a variety of rarities. From this we pass into an orangery, 36 feet square, containing a fine healthy stock of fruiting Orange trees, chiefly of the Tangerine variety, though others are grown as well, with *Bougainvillea* on the roof. *Gloxinias* and *Gesneras* are also here stowed away for the winter.

As within the limits of one article justice cannot be done to the whole of the noble collection at Dangstein, we must defer till next week the notice of the remainder, meanwhile giving a view of a portion of the houses and gardener's residence.

EXTRACTS FROM PAPERS COMMUNICATED TO OUR GOVERNMENT

RESPECTING THE PHYLLOXERA VASTATRIX, OR NEW VINE SCOURGE.

Sir C. MURRAY to Earl GRANVILLE.

Cintra, June 12th, 1872.

This new scourge, that has recently attacked the Vines in France as well as in Portugal, threatens to be as desolating in its effect as the disease called *Oidium*, which for some years destroyed viticulture in Madeira, and has inflicted serious damage on it both in France and Portugal, notwithstanding the partial remedy that has been discovered and adopted in the free use of sulphur. The insect which has lately been making such ravages in the vineyards, *Phylloxera vastatrix*, seems, according to the report of those who have examined it carefully, to be of the same species as the aphid, but the *Phylloxera* appears to be not only particularly destructive, but also very difficult of extirpation. A printed paper states (I know not whether correctly or not) that the French Government has offered, and hitherto without success, a reward of 20,000 francs to anyone who can discover an effectual remedy. According to the statement of the paper above referred to, the injury inflicted by this scourge on some of the vineyards in the Douro district has been terrible, and one vineyard is specified, the average produce of which had been seventy pipes of wine, and which last year only produced one; and a certain *Senhor Avelino*, who was sent into that district to examine and report upon its condition, estimates the total loss on last year's vintage there at five hundred pipes.

The Portuguese Government has named a Commission, under the presidency of the Director-General of Commerce and Industry, to examine into the progress of this dangerous evil, and to gather from all quarters (whether scientific or practical) suggestions for the best mode of extirpating it. One French Vine proprietor reports that he has tried with some success the expedient of digging a hole round the stem of the Vine, which he half fills with chimney soot and then covers over with earth.

If this should ultimately prove an effectual antidote to the malady, it is much to be regretted that the Vine-growers of France and Portugal are not somewhat nearer to London, where it could be cheaply and abundantly supplied.

Sir C. MURRAY to Earl GRANVILLE.

Cintra, July 3rd, 1872.

I ADDRESSED a despatch to Mr. Consul Crawford, at Oporto, desiring him to make all the inquiries necessary in his neighbourhood. I have received his report, and enclose it herewith. Your Lordship will observe, on reading it, that Mr. Crawford seems of opinion that the fears, amounting almost to a panic in some districts, which have arisen concerning the ravages of this insect, are very much exaggerated, and he attributes this very much to the recent publication of a pamphlet on this subject by *Senhor Oliveira*. I am inclined to agree in this opinion to some extent. I trust that the grounds on which Mr. Crawford expects that the Portuguese vineyards will enjoy an immunity, total or partial, from the scourge, may prove correct. In reference to the case specially mentioned in the 6th page of Mr. Crawford's report, it is a curious circumstance that I have, within the last few weeks, had one precisely similar in my garden in Lisbon. An old, strong, healthy, and hitherto very fruitful Vine, began suddenly to wear a sickly appearance; the leaves began to wither, and to assume first a yellow and then a reddish appearance. My gardener had never seen this or any other Vine in my garden attacked in a similar manner (although we are obliged to sulphur all our Vines several times yearly to preserve them against *oidium*); so, thinking I had received my first visit from the *Phylloxera*, I desired the gardener to uncover and carefully examine the roots, but they appeared perfectly sound and healthy, and the disease which has destroyed this year's crop of fruit and leaves remains a mystery. I have surrounded the roots with a bed of soot overlaid with earth; but whether the Vine will recover or die remains to be proved.

(Report by Consul CRAWFORD upon *Phylloxera vastatrix*.)

The attention of the Portuguese Vine-growers has not been called until the last two years to the existence of a new enemy of the Vine in the shape of *Phylloxera vastatrix*.

The discovery in France of this supposed importation from America was not made till the year 1855, since which time its natural history and the effect of its ravages upon the Vine plant have been industriously investigated by French entomologists and enologists; and in the opinion of some persons the extent of these ravages has been not a little overstated.

There is little doubt however that, after making due allowance for the exaggeration common to those who make a long study of special subjects, the injury done by this insect to vineyards in certain districts of France, and under certain circumstances of Vine cultivation, has been considerable.

Phylloxera vastatrix is a small insect of the sub-order of Homoptera. The adult female only has, as yet, been discovered; it is found in the apterous and also in the winged state. The eggs would appear to be generally deposited in galls formed by the insect on the leaf of the Vine, and the newly-hatched grub finds its way to the roots of the plant upon which it feeds.

The first symptom of the Vine being attacked is the reddish yellow colour of the leaf. No means of checking the progress of the insect has yet proved effectual.

Senhor Oliveira, junior, has quite recently published a pamphlet upon the subject, which, though a hasty and ill-judged compilation from French authorities, may, perhaps, have the effect of arousing observation on the part of the Vine-growers. This work, however, is full of unpardonable exaggeration, tending only either to encourage undue alarm, or, as is more probable, to excite utter unbelief in the writer's assertions: e.g., the author begins by stating that a plague has fallen upon the Vine industry of the country one hundred times more destructive than the old Vine disease—the *Oidium Tuckeri*.

The food of *Phylloxera vastatrix* being the roots of the plant, it is obvious that it is only where the young and more tender roots of the Vine are near the surface of the ground that they can be destructively fed upon by so small and delicate an insect.

This is proved by the experience of French observers.

In vineyards where the soil is of little depth, in those where the drainage is deficient, and particularly in those French vineyards where, quantity rather than quality of wine being sought for, cultivation by the plough and frequent manuring are employed, the presence of the insect has been found to be more or less accompanied by damage to the Vine; for in all these cases the fine root-fibres are near the surface and within reach of the insect. The same, of course, applies to newly planted Vines, which are especially liable to destruction.

On the other hand, *Phylloxera vastatrix* is never observed to attack Vines allowed to creep over pollarded trees, or over trelliswork; and Vines so trained form, probably, nineteen-twentieths of all that are grown in North Portugal—the Vines in such cases being usually well-established plants of many years' growth, with deep-reaching roots. Again, in the district in which port wine is produced, although the shape of the Vines is

bush-like, as in France, the roots descend to a great depth in the schistose soil—a depth, as I have myself had occasion to observe, sometimes exceeding 15 feet.

The same holds good, though to a less degree, with regard to the Vines of the Baira da district, and elsewhere in the province of Beira, where they are grown in bush shape; and it may be observed generally of this consular district that the wine cannot be profitably produced except in deep soils, on account of the frequency of long summer droughts, which cause the plant to send its roots far down in search of moisture.

It will easily be concluded from these facts that the conditions of the growth of the Vine in Northern Portugal are by no means favourable to the development of *Phylloxera vastatrix*.

Senhor Oliveira, junior, mentions two instances of the ravages of the insect in the port-wine district. In one of these cases, the yield of wine was reduced from sixty pipes to eight pipes in two years, but in neither case was it clearly proved that the destruction was the work of *Phylloxera vastatrix*. The roots of the plants in the above-cited instances were indeed found to be decayed, but no insects were discovered, and no particulars of the age of the Vines, depth of soil, or character of the exposure, are given in either case.

I have inquired of several extensive Vine-growers in the Alto Douro (the port-wine district), and I can learn of no undoubted case of the appearance of *Phylloxera vastatrix*. One gentleman of great experience was inclined to think that the Vine has for many years been subject to a disease, the symptoms of which correspond to the appearance said to be produced by the ravages of the insect. He had lately rooted-up Vines of his own whose leaves were withered and yellow, but in no case were the roots in any way affected. He mentioned having seen, in the month of May of this year, a vineyard in which, in four days, the leaves had changed from a healthy green to the colour and appearance of the common zonal Geranium, but here, unfortunately, no further examination was made.

The conclusions to which I have come, after fully investigating this subject, may be summed up as being—

1. That no certain grounds exist for believing that any, or at least any serious damage has been caused in North Portugal by *Phylloxera vastatrix*; but, while no scientific observation whatever has been brought to bear upon the subject, it is impossible to pronounce definitively upon its existence or non-existence.
2. That the great majority of vineyards in North Portugal will, from their peculiarities of cultivation, escape entirely.
3. That it would be safe to predict that, if ever the insect becomes numerous here, its destructive influence will be felt first and chiefly in the vineyards which produce the Baira da wine, and afterwards, and less extensively, in the district of port-wine production.

Consul T. C. HUNT to LORD LYONS.

Bordeaux, July 2nd, 1872.

THIS insect, which seems to have been first observed in the course of the year 1868 among the vineyards of the Rhone, is said to feed on the juices of the most tender roots, and, by cutting off the flow of sap at its fountains, to cause the death of the Vine.

I am not aware that it has been found in this part of France, although reports of its existence here were not wanting as far back as 1870. There can be no doubt that, as the situation of the evil is of very difficult access to any topical application, the introduction here of an insect of such enormous multiplying functions would have been a constant subject of reference by the local newspapers.

Dr. HOOKER to Viscount ENFIELD.

Royal Gardens, Kew, September 19th, 1872.

YOUR Lordship will have gathered from these papers that the *Phylloxera* attacks the Vine in a part—namely, the root—in which it is not only very sensitive to injury, but to which the application of any topical remedial agent is exceedingly difficult.

Considering the undoubted injury which the culture of the Vine has already received from the *Phylloxera*, and our present ignorance of any effective means of arresting it, it is impossible to view without alarm its gradual extension in Vine-growing districts. The extreme anxiety which is felt upon the matter in France is evidenced by the extensive literature which has already been devoted to it. A summary of this up to the end of last year, and dealing with no less than five hundred separate papers and articles, has been recently published by MM. Planchon and Lichtenstein, under the form of an extract from the proceedings of the thirty-fifth session of the "Congrès Scientifique de France," held at Montpellier.

It appears from this that no remedy really effective has at present been devised, except that of flooding the vineyards during winter, by which means the insect is destroyed in its hibernating condition. Unfortunately, though this is practicable in the lower part of the Rhone valley, it is obviously not possible in others, and these the most important of the French wine-growing districts.

The attention of the Portuguese Government seems to have

been thoroughly roused to the importance of the subject. A communication from the French Consul at Lisbon published in the "Comptes Rendus" for September 9th of this year "*signale la présence du Phylloxera dans quelques vignobles non loin de Porto, dans le district de Villa Real, près des provinces de Douro et de Traz-os-Montes, ainsi que dans le voisinage de Santarem, à 70 Kilom. de Lisbonne.*"

It is also stated that a Commission has been appointed by the Government to study the subject.

Mr. Consul Crawford in his report dated June 29th (No. 56), was probably correct in his opinion as to the exaggeration of the statements current at that time. No harm can, however, arise from the Vine cultivators being thoroughly warned beforehand as to the serious nature of the malady. There is reason to believe that on the first symptoms of attack in isolated cases the prompt destruction of the Vine, its burning on the spot, and the subsequent treatment of the soil with some approved insecticide, such as carbolic acid, would be of great importance.

A communication from M. Louis Faucon, who has practised the method of submersion with success, was recently laid before the French Academy ("Comptes Rendus," September 9th, 1872), in which the important fact, ascertained apparently with certainty, is announced that the *Phylloxera* in migrating from diseased to healthy Vines comes to the surface of the ground during sunshine. Its dispersion is also, no doubt, in this case favoured by the action of the wind, by which it is blown along the surface with dust.

With respect to Mr. Consul Crawford's opinion that the deep rooted Vines of the port-wine district will enjoy an immunity from the disease, it is proper to remark that even deep-rooted plants have superficial roots as well, and, as the Vine is notoriously sensitive in cultivation to influences injuriously affecting its root action, there is reason to fear that if the superficial roots of a Vine were materially affected by the *Phylloxera*, the health of the plant would not be altogether unaffected.

With reference to the dispatches and enclosures relating to the Bordeaux district, it appears that the presence of the *Phylloxera* has been definitely ascertained there by the Commission appointed to study the subject by the French Academy. Its ravages are, however, more slow in their extension than in the southern portion of the Rhone valley, and have taken a somewhat different form. A remarkable fact is, the immunity which Vines of American species appear to enjoy in this district.

Nor have the Vines cultivated in this country under glass escaped up to the present time. There are now several well-authenticated cases of injury from the *Phylloxera*, and there is even reason to believe that it is present in many places where it has not as yet been recognised.

GALVANISED WIRE FOR FRUIT TREES.

MR. RECORD (page 469), wishes to hear the opinions of others respecting the use of galvanised wire for fruit trees, &c. My experience of it is this: I have used it for some years for several in-door purposes, and more especially for Peach trees, and I have never yet traced a single instance of gumming to the galvanised wire alone. If I wanted to produce gumming I should tie the shoots in quite tightly to the wires whilst very young and tender, and in a very short time they would be bruised to such an extent that I believe gumming would follow sooner or later. To keep the trees healthy and entirely free from gum, which is always my object, I have adopted and hitherto succeeded with the following system: I twist the matting once or twice round the wires for the shoot to rest against, and then tie so loosely that the shoot can thicken considerably before receiving any pressure, which must be avoided in so young a state. The shoots must be occasionally watched during the summer, and, if found to be the least pinched-up for room cut the tie at once and retie if needed. At the winter tying-in I adopt the same precaution, and I believe if everyone were to act on this principle, which has often been recommended, gumming would be to a great extent lessened, if not entirely prevented.—H. HARRIS, Naseby Woolleys.

SOME PREDATORY INSECTS OF OUR GARDENS.—No. 38.

A GOOD many animals at one time or another get the name of insect applied to them, while they are, if not unlike the true insects in habit, exceedingly different in structure. Thus, our facetious friend *Punch* depicts a railway traveller asking eagerly of a porter whether he should have to pay travelling charges for a good-sized tortoise he was carrying with him. In answer, the official assured him that the creature was exempt, as it was—an insect! I was, however, about to say that there are instances where true insects simulate the appearance of

animals both superior and inferior to them in the scale of creation.

During the present summer the larva of *Blennocampa Cerasi* has been common in many places on the Cherry and Pear, and also occasional on other fruit trees. Nor is it confined to the orchard, for I have beaten specimens, which I take to be this species, off the Oak. In several districts it has been sufficiently numerous, small as are its proportions, to nearly defoliate the trees. In its aspect it has quite the appearance of a juvenile slug, and we can imagine a gardener shaking his head with anger and vexation as he picked, or tried to pick, one of these off a leaf, and soliloquising that things were coming to a pretty pass when slugs took to travelling high up on the branches of trees; and with prophetic eye he perhaps beholds them devouring fruit which has hitherto escaped their attacks, however it may be exposed to other depredators. This larva belongs to the Sawfly tribe, and matures into a true winged insect, though so very molluscous in appearance and in its mode of progression. Some one having asked the editor of the "Entomologist" whether powdered hellebore was effectual in exterminating it, that gentleman remarks pathetically that it was difficult to know when you had purchased an article by that name if it was what you required. The chemists may be left to defend themselves in this matter. I presume, though obliged to exercise much caution in the vending of so poisonous a drug, they would scarcely dilute it wilfully to make it less harmful. No doubt, however, the editor is right in adding, that if hellebore is of service in the destruction of *Blennocampa Cerasi*, the application of the remedy is not easy to carry out. Handpicking, even when the larvæ have attained some size, would be troublesome and tedious, the insect holding so tightly as to squash in the fingers ere it be removed, nor is it always within reach. The application of fumigants would be more likely to answer, and compel the pest to double-up and lose its hold. As yet the economy of the species is but imperfectly known, and I hope to revert to the subject again when I shall have been able to observe for myself the mode of the deposition of the eggs. Many of the methods of killing aphides, cecci, &c., would probably help to thin the numbers of these little unsightly pests; the nostrums sold in the form of powder would be, I suspect, generally too expensive and of no great efficacy. Lime thrown upon the trees in early summer, at a time when they are not positively wet but rather damp, has been suggested as likely to be useful.

An enemy still better known both to the amateur and professional grower of fruit is the insect called the American blight, known in science as *Aphis lanigera* or *Lachnus laniger*, also termed *Eriosoma Mali*. Like thieves with various aliases, this circumstance does not prepossess us in its favour, and it is certainly one of the most troublesome and annoying enemies of the Apple: it is comparatively infrequent on the Pear. I have not the means of ascertaining by statistics whether it has been less common in England this season, but in some places its propagation seems to have been considerably interfered with by the rough weather we had in the second winter or spring of 1872. It is amusing how much interest has been excited by the question as to where this insect came from if it be not a native of this country. The ordinary appellation, of course, throws the responsibility upon the new continent, though there is no very strong evidence on the point, and we could not get up even the outline of an "indirect claim" for the injuries our fruit trees have received. All, or nearly all, that can be said is that Sir Joseph Banks saw an instance of the ravages of this species at a nursery in Sloane Street in 1787, and fancied it had been imported from America. On the other side, Mr. Salisbury avers that it came from France in company with some refugees much earlier, and first located itself at Paddington; also he had been told by an old French gardener that in the neighbourhood of Montpellier and elsewhere this pest had been common for many years. No! emphatically replies a French professor, the species came from England to France about 1812, and about a dozen years after that it travelled into Belgium. Then, again, we find the American pomologists declaring that they imported it from Europe with some trees. After all, it seems very probable that this blight is indigenous in each country mentioned, as though instances have often occurred of an imported insect or plant establishing itself, it has also happened that the arrival of a species from abroad has brought to light the fact that it was already a native of the country to which at first it was thought to be a visitor.

When we investigate the economy of this insect, we see that

in some particulars it is very much like an aphid, in others it resembles a coccus. The winged males have quite an aphid aspect, and, like those flies, they take excursions in the air sometimes, the object of which is doubtful; business rather than pleasure, some think, who believe they are then preparing for the continuance of the race. I am rather inclined to suppose that they wander off thus after the work of impregnation is completed. The downy females also travel from place to place, becoming detached by the wind, and thus float on until they effect a lodgment somewhere; should it be on the branch of a tree, then a new colony is soon established. This blight usually rouses itself from its winter inactivity in March or April, and if no measures have been taken against it during the cold season, the first sign of its approaching ravages is a peculiar hoariness, mostly about the old branches, in the cracks or crevices of which some of the insects have wintered. It should be noted, however, *en passant*, that *Eriosoma Mali* does not seem, in any stage of its growth, to be able to actually penetrate old wood; there must have been previously some crack or wound where the insects are observed to be engaged upon that. It is upon the wood of one or two years' growth that they appear to employ themselves with most eagerness. However, when they have once succeeded in establishing themselves in old wood, they will continue their destructive operations until branches are perforated, and even trunks. Huge excrescences often arise through the effect of the numerous punctures upon the alburnum. The secretion of sap is vitiated. In bad cases the blight spreads until the tree dies from the unhealthy action excited rather than from actual exhaustion of its strength. In orchards matters may sometimes be allowed to go on to this extent through inadvertence; in gardens it can scarcely happen if timely remedies are applied. By its habits it is evident that this blight thrives most in hollows and valleys, exposed trees often escaping. In autumn, too, nature will occasionally work a cure upon infected trees and shrubs, high winds and soaking rains dislodging multitudes from their resting-places, when they are hurled through the air until their downy investiture becomes their grave, unless a sudden change in the weather enables them, or at least a part of them, to reach a dry nook or crevice where, if they can fix themselves securely, the down serves to shield them from wet and cold. This same secretion forms an admirable screen for the young, which are exuded alive, and which have, like their parents, a beak or rostrum, which is hidden under the breast, and occasionally when not in use it is bent so far down as to project beyond the abdomen as a point. If we separate a mass of this downy substance (which it may be worth someone's while to submit to a chemical analysis), we find usually amongst the insects small ovoid or round bodies, which are not eggs but the excretions of the blight; and it does not appear that ants resort to this so habitually as to the sweet secretion of the aphides. Indeed, few other insects approach *Eriosoma Mali* with purposes either friendly or hostile, so well is it secured by its cottony robe, though the larva of a Dipterous insect, I believe a species of *Scæva*, has been reported as a devourer of these creatures. Nor are they eaten by birds, but it is possible they may sometimes avail themselves of the down in their nest-building. We cannot use it for anything, though we might succeed in extracting a colouring matter from the insects themselves.

As already noted, this blight is to be observed in winter by looking for it in sheltered angles of the trunk and branches, and under loose bark; but it is found also at that time about the roots of the trees, to which it descends in the autumn. Some writers recommend a careful watching about this season, and an occasional removal of the earth about the roots. What is carried away should be soured in water, and the fresh soil afterwards in its turn. This may be done several times. Where the blight is found to have actually attached itself to the roots, if the trees are not too large they must be taken up and cleansed, then replanted in different earth. With trees of some size the soil may be taken up around, and the roots exposed to a degree of cold—a sort of kill-or-cure method. Or the roots may be surrounded with a muddy compound, made by the removal of a portion of the soil and stirring into the remainder some ammoniacal liquor or strong soapsuds. It may be added, that before betaking themselves to a subterranean life the insects free themselves from a great part of their cottony covering.

What may be termed the general list of remedies is a pretty long one, and yet some who have tried a variety of expedients have been glad to come back to simple means; and they have

discovered that the careful removal of all rotten bark and cankered wood, followed by a thorough cleansing with water, done by means of a stiff brush, has answered very well. "Rusticus," or at least a Rusticus, wrote many years ago as follows on the subject—"Directly you see the least morsel of cotton, make up your mind to a little trouble. Get a plasterer's whitewash brush, then get a pot of double size, make your man heat it until it is quite liquid, then go with him into your garden, and see that he paints over every patch of white though not bigger than a sixpence. The next morning heat the size pot again, and have another hunt, and keep on every morning for a fortnight. Your man will tell you it's no use: tell him that's your business, not his. Your neighbours will laugh at you: do it before they are up. I have tried it and found it effectual." In Kent the folks are, as I perceive, strong in the faith of the efficacy of whitewash alone, which is applied indiscriminately to the trunks of the trees. Not much good is done by this, as a rule. Recently the application of a mixture of quicklime, sulphur, and lamp-black, after the diseased and infected parts have been cut away, has been strongly recommended; but some persons greatly dislike bedaubing their trees with this and other ill-looking and offensive compounds. Another nostrum is composed of vegetable tar, corrosive sublimate, spirits of salts, and hartshorn. This has been known to injure the trees somewhat. Others have employed a preparation more of the nature of a varnish, made of oil and resin to about the consistence of honey. Diluted sulphuric acid, in the proportion of three-quarters of an ounce by measure of the acid to seven ounces and a half of water is certainly a good thing if cautiously applied. Subsequent rains wash this into the crannies and crevices, and the blight does not relish it at all. Some advise the use of vinegar for young trees, as rather milder, and therefore less likely to be harmful to these.—J. R. S. C.

NOTES AND GLEANINGS.

At Bordeaux the *AMORPHOPHALLUS RIVIERI* is employed as an out-of-door ornamental plant. The spathes, which are of a blackish green, grow to the considerable dimensions of 5½ feet in length by nearly the same in width. When laid out in groups of four or five together they are said to have a very pleasing effect.

—The *Times* says, "Our New Zealand correspondent writes:—It may be interesting to English, and still more to patriotic Scotch readers, to learn that the SCOTCH THISTLE plays a very important part in this colony in assisting the spread of the English Grass. It has indeed proved itself a most valuable agent in preparing the rough Fern hills for the reception of Grass seed. The Thistle has its fling for three or four years, taking full possession of the ground; but, though inconvenient, it is by no means without its uses during that time, for sheep, cattle, and horses greedily devour the seed-heads when in blossom, and often eat the leaves of the plant as well, and many runs when under Thistles have carried more stock than before the weed appeared. After the Thistle has exhausted the land of its particular requirements and has died out, which it does in about four years, it is invariably found that stray plants of English Grass and Clover have been nursed into strength by their prickly neighbours, and that the long full taproots of the Thistle have opened and pulverised the surface soil, and prepared a seed bed in which the English Grass takes root and flourishes far better than on the natural surface of ground which has not been subjected to a similar course of preparation."

—From reports which we receive from different parts of the country it is evident that the APPLE CROP IN THE UNITED STATES is large this year—not so large, at least in western New York, as in 1870, but large enough to flood the markets of the great cities with perishable fruit, which must be disposed of at some rate or it will rot on the owner's hands. Consequently prices rule low, affording buyers a pretext for keeping down their offers for winter fruit to rates that will not afford orchardists profitable returns for their Apples.

—Some idea of the recent RAINFALL is given in the return of the Registrar-General. At Greenwich Observatory more than three-quarters of an inch of rain was measured during the last week of last month; the fall for November being thus raised to 2.9 inches. The rain measured during October and November was 7.3 inches, or 2 inches above the average fall in fifty-six years. Rain has now fallen seventy-five days.

—MESSRS. VAN EEDEN & Co., of Haarlem, intend to publish from time to time representations of the finest BULBOUS PLANTS, of which they keep a stock. Each part consists of six chromo-lithographs, and costs 12s. We have just received specimens of the two first numbers, and can recommend them both on account of their beauty and execution.

WORK FOR THE WEEK.

KITCHEN GARDEN.

GIVE air freely to *Cauliflower* and *Lettuce* plants in frames; indeed, the sashes should merely be used to exclude frost and throw off rains, for they will do all the better in spring for being kept hardy and stocky over the winter. Take advantage of the first dry day that may occur, with the ground in a rather dry state, to earth-up closely any of the *Celery* that may have outgrown the previous soiling, and be prepared to protect the ridges in case of severe frost. Dry stable litter answers very well for this purpose; but where they can be afforded, light straw or reed shutters are preferable, as being more easily applied, causing less litter, and these are also useful for excluding wet. It will soon be time to be providing seed for the early crop of *Celery* next season, and for this purpose we know of no variety equal to Cole's Dwarf White. This is, as its name indicates, a dwarf variety, and cannot be grown to a large size; but where quality is preferred to size it will give satisfaction, for it is very crisp, soon blanches, and the flower is everything that could be wished. Attend to keeping up a regular succession of *Asparagus*, *Rhubarb*, and *Sea-kale*, by introducing moderate quantities at short intervals, into heat. Draining, trenching, and the wheeling-out of manures must now be attended to; the latter operation requires picked weather in which to perform it. Nothing is more injurious to soils than wheeling on them in wet weather. Abundant preparations for the coming spring must take place in this department. A good stock of garden mats must be procured and tied for covering purposes, and several mats cut and tied in bunches in two classes, and hung up ready for the summer use. Plenty of shreds for wall trees will require cutting, and the old ones proved and passed through the ordeal of boiling water. Here, too, the preparation of labels for dating and naming crops must proceed, and the seed-drawers ought to be examined, cleaned out, and the old seeds dated and classified, in order that their relative value may be readily known. The new seeds will, of course, want arranging. Above all, a scheme of cropping, based on a judicious rotation, should be laid down forthwith: much experience is requisite in this matter.

FRUIT GARDEN.

PUSH forward pruning, nailing, tying espalier trees, and such-like tedious operations as fast as the weather and circumstances admit. Get manure wheeled upon vacant ground when the weather is frosty and this can be done without injuring the walks; and get all spare ground turned up as soon as possible, so as to expose it to the action of the weather. For land that has been long cropped with vegetables, a dressing of fresh loam would in many cases be preferable to manure, and where this is wanted and can be obtained it should be got to hand, in order that advantage should be taken of frosty days for wheeling it upon the ground. When fresh soil cannot be obtained, charred vegetable refuse, such as the prunings of shrubberies, edgings of walks, and many things which turn up in the course of the season, may be cheaply made to form an excellent substitute.

FLOWER GARDEN.

THE leaves being all thoroughly cleaned and removed to the compost yard, the next thing to be thought of is to take advantage of frosty weather, when other operations are temporarily closed, in running the billhook and saw through the overgrown shrubs, not with the idea of destroying the picturesque character of shrubs or evergreens which have reached their full expression, but in order to reserve the more delicate from the tyranny of their prouder neighbours, to remove dead branches, and to preserve a due right of passage through the plantation walk. The very mild season has already caused early or shallow-planted Tulips to show above ground. It will be advisable as soon as observed to put a small quantity of heath soil over them, to protect them from frost and cutting winds; this may not be applied regularly over the bed, but in small cones over each plant as it shows itself. In the past season I have tried heath mould with the best success. Carnations and Picotees should be carefully examined. The foliage in some situations is apt to get spotted. As soon as this is observed remove the diseased leaf with a pair of sharp-pointed scissors, or it will spread through the stock most rapidly. Examine the axils of the foliage, dirt and dust are apt to lodge therein; this should be carefully removed—in fact, all Carnations will be better for being gone careful over, stirring the top soil, &c. Our Polyanthus are showing we have removed all the trusses as they appear. Examine the tubers of Dahlias, probably the labels may be getting nearly

illegible or the ties decayed; in either case immediate attention is requisite.

GREENHOUSE AND CONSERVATORY.

Attend carefully to specimen hardwooded plants which it may be necessary to winter in the conservatory. Many of these are impatient of fire heat and a confined atmosphere; use no more artificial warmth, therefore, than is absolutely necessary, and endeavour to counteract its drying effects either by means of evaporating-pans or by sprinkling the borders, &c., in order to prevent anything like a dry parched state of the atmosphere. It is in many cases difficult to maintain a sufficiently moist atmosphere without causing drip, as the moisture of the house is condensed upon the glass, and unless provision is made by means of inside gutters and pipes to catch the condensed moisture and carry it off, it is nearly impossible during frosty weather to preserve the beauty of the flowers for any length of time; and in cases where there is no provision made against this kind of moisture falling upon the plants, the temperature should be kept as low as may be consistent with safety, avoiding moisture in the atmosphere as far as possible whenever the glass is affected by frost. At the conclusion of the year I can do no better than recommend that all matters connected with the departing year which may by any means have taken the character of arrears, be brought up as much as possible, in order that the new campaign may be opened with vigour and system. The period will shortly arrive for in-door work, and assuredly there is no lack of this in bad weather in establishments where plant-growing is followed up, and where good gardening in general is carried out. The preparation of composts for orchidaceous plants, the making and renewal of labels, preparation of sticks, stakes, trellises, and the thorough cleaning of all garden pots or tubs, together with the preparation of draining materials, will now require attention.

STOVE.

If there is any prospect of a scarcity of bloom next May, a portion of the *Achimenes* and *Gloxinias* should be repotted at once and placed in a warm part of the stove, choosing such as have been the longest at rest; and a few *Clerodendrons*, *Allamandas*, a plant or two of *Echites splendens*, and *Dipladenia crassinoda*, may also be started for the same purpose.

COLD PITS.

Plants in cold pits, when they have been excluded from light and air for a few days, must not be too suddenly uncovered; on the contrary, they should be very gradually inured to exposure. Take advantage, however, of mild days to give air freely, and keep the plants very sparingly supplied with water at the root, so as to prevent the production of weak sappy wood. Look frequently over anything subject to the attacks of mildew; apply sulphur the moment this pest makes its appearance, and see that everything is perfectly free from insects; also look over the plants carefully, and remove dead and decaying leaves, which, when left, only encourage damp and mildew. See that the frames are well banked-up, so as to be proof against any ordinary frost, and do not neglect covering up securely at night.—W. KEANE.

DOINGS OF THE LAST WEEK.

Wet and drizzle continuously, making most out-door work unpleasant, except ridging-up and digging when at all favourable. Draining was proceeded with, also pruning.

Charring Twigs and Small Branches.—For this purpose we must reiterate what we stated a short time ago, that, to get the most char from such materials, we find it the best plan to use no covering, except some damp weeds or damp litter. We let the small prunings, &c., burn just sufficiently to char through, and then pull out with a hoe and extinguish the char with water, spread it out a little while, and then pile it into a heap whilst it has just sufficient heat left to dry itself, but not to ignite. When dryish it is sifted into different sizes, the finest dust coming in well as a valuable antiseptic for covering the surface of the soil among small seedlings, boxes of cuttings, &c. The rest comes in very useful for mixing for pot plants—quite as useful as if we used the best and largest pieces of charcoal broken down to the requisite size.

Ashes and Char.—From want of room—instead of making the refuse from the kitchen garden and flower-beds the basis of a huge rubbish heap, the heat from decaying *Geraniums* and *Calceolarias* being sufficient to destroy most seeds of weeds, and throwing their nutritive properties into the thin coating of soil, which prevented the escape of what was at all valuable—we burned the whole up, and on turning it over find we have some cartloads of white ashes mixed with others black and charred; and these, when cooled, put into a heap, and kept dry, will be very useful for many purposes, and the ashes, too, will act as a manure. But for the above necessity, however, we are convinced that we obtained far more rich manure from the slow and careful decomposition of all such rubbish, and more especially when sprinklings of salt and lime were at times added to the heap.

KITCHEN GARDEN.

On a day comparatively dry, and on a ridged bank after the Cauliflowers were cut, we turned the soil over and planted with *Potatoes* fully 2 feet apart from row to row, and then planted a row of stout Lettuces between every two rows of *Potatoes*. In favourable seasons such *Potatoes* will tuber early, and yet, if at all fortunate, the Lettuces will be out of the way before the *Potatoes* require the room. We have been in the habit of pulling the earth over the tops of such *Potatoes* when they appeared early in cold weather, or shaking a little dry litter over them at night, and allowing it to remain on in a cold day, but removing it carefully when the weather was fine. We have also had *Potatoes* out of doors earlier than these by cutting out beds for Celery, $4\frac{1}{2}$ to 5 feet in width, a little deeper than usual, say fully 2 feet. On that we placed nearly a foot of hot dung and leaves, then a few inches of rather dry soil, and planted the *Potatoes* in rows across, with about 4 inches of soil over them. Radishes were sown in single rows between the rows of *Potatoes*, and thatched hurdles or mats covered the beds at night and in cold mornings.

Radishes may now be sown on warm borders between *Potatoes*, by themselves, or with Early Horn *Carrots* as a main crop. We have not yet made beds for frames for *Carrots* and *Potatoes*, and we never think that for such a purpose we lose much by delaying until the new year has come in. Of all profitable things, hardly anything is more so than a small two-light box of Early Horn or Dutch Carrot. If not too much thinned, the drawings are wonderful. Thinning for use may commence when the *Carrots* are as large as a good-sized finger, though they are better when the top is as large as one's thumb. Even at the smaller size the *Carrots* are very sweet, and, contrary to most things, though the young plants must not be choked, still the multitudinous gatherings will depend much on not thinning severely until the thinnings are of use.

Cauliflowers, young plants. Those standing out of doors had become so soaked that we felt a little alarmed as to what a keen frost would do, and as they were small stubby plants, we filled the space of several lights in a cold pit, and after pricking them out some 3 or 4 inches apart, we covered the surface with dry sand and charred refuse, and will give plenty of air back and front, but will not slide or pull off the sashes whilst the wet and drizzle last. An hour of bright sun in mild weather should be taken advantage of by pulling the lights off all things in cold pits and frames; but in such weather there must be constant watching, as five or ten minutes of a sharp shower would do more harm than the free sun would do good. Damp in such a season must be avoided as much as possible.

Cucumbers.—Against our will we pulled out five lights of *Cucumbers* from a pit that had done good service for the best part of a twelvemonth. In one case we have met with a disappointment, and that, too, from seed sown on the place, but we fear not so carefully marked as it ought to have been. We had fine strong plants in 12-inch pots, but as they showed fruit freely we found the most of them would be quite unsuited to our purpose, and at a late period we struck cuttings of the sort desired (The Volunteer), and therefore the plants are yet but small. Cuttings have this advantage, that they fruit earlier and more abundantly at first, but they do not generally continue to bear for a season like seedlings. Those in the small narrow pit will be put in pots in a day or two, as described last season. We believe that by thus planting in pots we get more fruit and much smaller foliage—a matter of no moment in a large roomy *Cucumber* house, but of importance in a small, narrow, lean-to pit. As a precaution, all the walls, woodwork, glass, &c., were well syringed and scrubbed with water close on the boiling point; walls white-limed and sulphured, and simple wire trellising run over with the paint brush. Such little precautions often save much future trouble.

FRUIT DEPARTMENT.

As soon as drier we shall proceed with out-door work, as pruning, nailing, planting, &c. All forcing must be gone about very gradually when there is so little sun to neutralise the tendency to drawing in heat in such dull weather. We should have had lots of *Strawberries* in frames, &c., with just a little heat below them to bring them on gradually. Much heat at the bottom of the pot will do more to encourage the formation of large leaves than of strong trusses of bloom. Those who have had little experience would act wisely by setting the bottoms of the pots in such mild heat on boards, slates, or tiles, so as to prevent rooting through as much as possible. It will also in such cases be easier to err on the side of too much moisture rather than dryness.

ORNAMENTAL DEPARTMENT.

Watering.—We alluded to this last week, but one important matter was omitted—the temperature of the water for pot plants. Some people err from using the water too warm; for instance, using water at from 65° to 70° for plants growing in a temperature of from 45° to 50°. Such watering is apt to produce weakness of growth, and the sudden changes at the roots do harm. Some, again, err as much on the other side, such as

applying water at 40° to plants and bulbs growing in rooms or houses in a temperature of 70°. The rule of safety is to use water as warm as, or a few degrees warmer than, the place is in which they are growing. There will thus be less tendency to weakening or checking. For instance, plants growing in a temperature of 70° might have water at from 70° to 75°; plants growing in a temperature of from 45° to 50° may have water at from 48° to 55°. There is one tribe of plants, however—the Calceolaria, which we always found injured rather than otherwise by a high temperature under glass, or using water warmer than the place in which they grew. A few of our cuttings in a cold pit close to the back wall became dry lately. The place then would be about 42°, and common pond water was used at about 41°. Only those that were dry had a little drop, as the generality were damp enough, though receiving no water from the time they were watered to settle them firmly when they were inserted.

Bulbs.—These in slight hotbeds should be watched so as not to get too hot, and before being taken to rooms, or to stand with the pots exposed in a house, they should have the pots raised gradually out of the bed, doing it a little at a time. Let them stand free and be kept a little cooler before being removed. Some of these trifles will in a great measure prevent the disappointments that often arise from sudden changes of circumstances and temperature. These changes are the best of all means for making the plants the favourite abodes of insects. We have grown even Calceolarias to great size and luxuriance by giving a temperature in early spring of 60° to 65°, with proportionate humidity, but under such treatment we found that fumigating became a mere matter of course. In a cooler moist atmosphere we have scarcely needed to fumigate at all.—R. F.

TRADE CATALOGUE RECEIVED.

James Veitch & Sons, Royal Exotic Nursery, King's Road, Chelsea, London, S.W.—*Catalogue of Garden and Flower Seeds, Horticultural Implements, &c.*

TO CORRESPONDENTS.

* * We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely to The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

POSTING OUR WEEKLY NUMBERS (W. M., Brixton).—You can have them on Thursday evening.

OUR BACK VOLUMES (C. D. W.).—Only vol. xv., containing the last six months of 1868 can be had, price 8s. 6d. The numbers of the first six months of that year are out of print. Each volume that we have perfect is price 8s. 6d. The Pouter has not been published in a separate form.

INDIANRUBBER PLANT (R. W. G.).—It is the *Ficus elastica*, a tree that is fully 20 feet high in its native country. It produces a small fig sometimes in the spring.

CUCUMBER PLANTS FROM CUTTINGS (H. B. L.).—The stems may be layered in the soil, and they will root freely, but the plants do not transplant well. Plants from cuttings are better than those from layers. The points of the shoots should be taken off with two joints and the growing point, which will give a length of about 8 or 9 inches. Cut the shoot across below the lowest joint, remove the leaf, and insert the cutting up to the next leaf in a compost of light fibrous loam, with a third of leaf soil intermixed. Place the cuttings in a hotbed of 75°, plunge the pots to the rims, and cover with a hand-glass or put a bell-glass over each separately. Keep the cuttings close and moist, shading from bright sun, and in a week to ten days they will be rooted, and should have air admitted gradually, removing the hand-glass or bell-glasses as they grow. They may either be planted out or shifted into larger pots, planting rather low, and earthing-up as they grow.

TURNIPS DONE GROWING (South Devon).—The Turnips will not now attain any larger size; the only increase will be of top, therefore they should be taken up, cutting off the tops and using them first. Store the Turnips in a shed, and cover them with straw. If they are a white or yellow kind they will not keep long, but they may be kept much longer if pulled up and stored than if left in the field and pulled up as wanted, especially if we should have a period of severe weather. Turnips do not exactly stop growth at this season if the weather is mild, but they go to top, which exhausts the juices of the root.

FORCING RHUBARB AND SEA-KALE (*Idem*).—To force the Sea-kale and Rhubarb, which you have at present covered with leaves where it grows, you have only to invert over the crowns of the Sea-kale pots or boxes which are not less than 15 inches and need not be more than 21 inches deep. It is desirable to have openings large enough to admit of its being seen when the Sea-kale is fit to eat. The Rhubarb will require deep pots or boxes—even hampers will do. They should be from 2 feet to a yard deep, and it is well if the tops of these are moveable, so that the stalks can be gathered without going to the trouble of removing the pots, boxes, or hampers. The dung we should presume to have been thrown into a heap about a week previous, watered if dry, and to have attained a good heat. We should mix this with an equal quantity of leaves, if you have them at command, place the fermenting materials about 2 feet wider than the pots, &c., all round, and fill in between and around these with the dung and leaves, forming a hotbed over the plants, carrying it about a foot higher than the pots—say 2 feet 6 inches for the Sea-kale, and 3 feet 6 inches for the Rhubarb. Place the hottest materials at bottom, and the longest and coolest at top. In a fortnight to

three weeks you will have both Sea-kale and Rhubarb, and will need to start another lot, therefore you must apportion your stock so as to keep up a successful supply, not having a glut at one time and nothing at another. The heat will need to be seen to; thrust a stick into the litter about half its depth, and by feeling its end you will be able to regulate the temperature, taking off some of the litter if too hot, and covering deeply if not warm enough. The stick should be hot, without causing a sensation of burning. If so hot that it cannot be held in the hand the bed is too hot.

WILD FLOWERS (*Miss H.*).—What you say is true, but it would be objectionable not to give portraits of all flowering native plants. The present volume concluded with last month's number.

HOT-WATER CISTERN—TRAINING IN GROUND VINERIES (H. T.).—It is not of much importance where your supply cistern for the boiler is, provided it is higher than all the pipes, so as to keep them full when the air is expelled. The size is of little moment in large places, as the expansion is more gradual. In small houses it is well to have the cistern large enough to permit of the rapid expansion of the water, otherwise it will run over when hot, and be empty when cool. We have cisterns communicating at once with the extreme end of the flow pipes, and there all the pipes are filled. When convenient we prefer the cistern to be not far from the boiler at a proper height, and a small pipe to go from it at once to the bottom of the boiler. In ground vineries we have seen the Vines fastened to wires, and also laid on slates—in the one case the Grapes suspended, and in the other lying on the slates; and, on the whole, we should give the preference to the suspended, so far as the uniformity of the berries were concerned. What say others?

PLANTING EARLY POTATOES (R. S.).—Last spring was unusually warm in the early part, and severe in the latter part. This told disastrously on early-planted Potatoes. Your soil, being gravelly and light, ought to answer well for early Potatoes, and your preparation is excellent. In such a soil we should not plant until early in March, and not then if the soil were not in a fit state. We should have the sprouts from one half to three-quarters of an inch long, and then plant not more than 6 inches deep, earthing well up when the tops were 6 inches high. Early Racehorse is a good sort; Veitch's Improved Ash-leaf, Monn's Pride, and Myatt's Prolific, are all good. We like the last better than any, but it is a few days later than the others.

PLANTS FOR BACK WALL OF VINERIES (G. J. H.).—The late house will answer well for Camellias. They must have a good border, and be trained to a trellis. We should advise Camellias for the early house as well, if you find Camellia blooms desirable in November onwards, and by means of the two houses you will be able to keep up a succession from October to April. The kinds we find good are Beall, bright crimson; Bonominia, white, flaked and shaded red; Conspicua, scarlet, semi-double; Mathotiana, crimson; Mathotiana alba, white; Monarch, scarlet; Reticulata flore-pleno, rose; Rubens, deep rose; Valtevaredo, rose; Targioni, white, red stripes; and Alba plena. The only other subjects we advise are the Orange family, and we should have them, if you think one house of Camellias sufficient, in the early house. The following would succeed—Citrus Aurantium (Orange), C. nobilis (Mandarin Orange), C. acida (Lemon), C. decumana (Shaddock), C. Limonium (Lime), C. medica (Citron), C. myrtifolium (Narrow-leaved Orange). They would produce an abundance of flowers, and fruit in due course.

STOVE IN GREENHOUSE (I. J. I. K.).—We think the proposed site for the iron stove at the north end of the span-roofed house is suitable, but for Ferns you will require a pan over it to keep the air moist. The simplest plan would be to take the pipe through a square of the roof; but you would get more heat if you raised it nearly 6 feet from the floor, took it across to the back wall, and along it to the wash-house chimney. To draw, it must rise first. With your position, however, we should think nothing of an iron stove. We would make a small stovehole and furnace in your wash-house, and take a small flue under your walk from the south end, round the west side, north end, and east side, to the wash-house chimney. The tile that covered the flue would form part of the path, and in a cold day you need not have cold feet. Two bricks on bed and 5 inches between them, with a tile securely fixed across, would make a cheap and safe flue. A single brick on edge on each side we have seen do, but two are better. If you tiled the path you would know nothing of the flue except from the heat.

LIVISTONIA ALTISSIMA, &c. (E. L. S.).—Try 5° more heat—namely, an average of 60°, with a rise of 10° to 15° of sun heat when you can obtain it. If the yellow tinge does not disappear, you had better examine the drainage and soil, and, if necessary, repot in a mixture of fibrous loam and heath soil, with a good bit of silver sand and little bright pieces of charcoal. Very probably a smaller pot will be an advantage; and after shifting, if you could keep the roots in a bottom heat of 80° for six weeks, with the top heat as above, most likely you would see a great change. For your mixed greenhouse of Camellias, Azaleas, Epacris, Acacias, Cinerarias, Calceolarias, and Primulas, we should not let the thermometer fall below 45° from October to April, and that would be a good average fire heat in cold weather. Of course, if the weather is warmer, take advantage of it, and allow for a rise from sun heat, provided air is early given, and the rise takes place gradually. We do not advise admitting much very cold air into such houses, but we can hardly tell you what is the lowest degree outside at which we would admit air, for we have let in a little when the air behind a wall was 25° below freezing point, and we were obliged to do it under a fierce sun. But the mode is the main point. For instance, in such a span-roofed house as yours we would give no front air in a very frosty day, unless we could warm it before getting among the plants. But if frosty and a bright sun, we would soon give a little air at the top, if it were only half an inch at first, increasing it, if necessary, by degrees, taking it away early, say by two o'clock, and regulating the heating medium accordingly. This top-air-giving under such circumstances in common houses is the secret of safety; the hottest moistest air thus escapes in small quantities, and the heavier cold air rushes through it, and becomes warmed and moistened before it reaches the plants. Sprinkling the stage and floor gently with water, and letting the fires down in a frosty bright day, are better than giving too much air when the air is dry enough to parch-up everything tender. In a dull, cold, frosty day the air given would be small indeed, and that just to change it a little, and given with the same care. On flow and return—that is, we presume two pipes all round, are not enough for a span-roofed house 19 feet wide, and we presume somewhat lofty. You would consult economy in having two flow pipes on the same level instead of one, and then the pipes need not be made very hot, and so would not be so trying to such succulent-leaved plants as Cinerarias. As to your taking the pipes, as you must, 70 feet up an air-drain, you will see in answer to a correspondent that it is recommended to keep these pipes dry, and either pack them in sawdust, &c., or leave an opening from the drain into the house. A small opening at the other end will send the heat into the house.

HOUSE FOR MELONS AND CUCUMBERS (G. M.).—If you have plenty of

manure we think the proposed plan will answer admirably. We shall make a few remarks in answer to your inquiries. In the first place we would leave the whole space beneath the beds open, as a heap of fermenting material there would permeate the whole of the dung chamber, and the heat would rise to the flooring of slates, though the manure was not close to them. We would not have a pigeon-holed wall at all on that account; but if disposed, you might have a solid wall a foot or 1½ foot or more from your flue, so that the flue also would give you bottom heat. By having a solid 4-inch wall, as we presume you intend to have now at the side of the flue, you would have the dung heat and the fire heat quite distinct, and with a close flooring of slates you would never have any steam from the dung in your house, however rank the dung might be when you put it in; and for getting all the heat the ranker the dung the better. By this plan, however, neither roots nor steam must pass your slate flooring. The roots coming through would be no advantage whatever, as they would be liable to be scorched when the dung was rank; and if they penetrated into it when mild, you would have your foliage too large, and justice would not be done to the fruit. There is another thing you must do to get the full benefit of the manure in the chamber. With just enough of air to keep up fermentation, the trench for getting the manure in, marked c, should be covered with close-fitting wooden covers. Again, we notice that your bed is 5 feet wide. We presume you intend training up the roof, and then a bed of earth a foot or 15 inches less in width would be ample for Cucumbers and Melons, so that if disposed, the flue might be placed farther in from the back wall, and thus tell more on the bottom heat. And once more here: be the flue where it is or a little changed, it would be advisable to have pans on it for water when deemed necessary, and these could be filled from little slides in the wall next the pathway, and these slides would enable you to have dry or moist heat from the flue into the atmosphere of the house, or you might have plugs and holes along the top of the chamber. We think that in summer—say from May, you will obtain enough of heat from the dung if well managed; but it would be a great auxiliary to be able to put on a little fire in dull cold weather, and in such weather it would be useful in giving a fine flavour to Melons. The improvement would be as suggested. A cover of frigidomo or light canvas for the roof would be of great advantage in the winter and early spring months. The simplest mode would be to fix it to the ridge and a pole in front, and pull up and let down with a pulley.

NAME OF FRUIT (*Rev. C. Badham*).—Wormsley Pippin.

NAMES OF PLANTS (*C. Price*).—*Adiantum hispidulum* and *Cheilanthes elegans*. The Moss is *Selaginella cuspidata*. 4, *An. Eschynanthus*, near *E. radicans*. (*Chester*).—1 and 3, *Adiantum cuneatum*; 2, *A. tenerum*; 5, *A. tetraphyllum*; 4, *Polypodium lineare*? 6, *Davallia pentaphylla*. (*R. M.*).—Your Orchid was too far advanced for determination. (*Seventeen-years Subscriber*).—*Peristrophe speciosa*, *Nees*. (*Justicia speciosa*, *Rozb.*). (*Cam*).—Mosses shortly, but do not send a large collection.

POULTRY, BEE, AND PIGEON CHRONICLE.

JUDGING SILVER-GREY DORKINGS.

I AM sure it would be a satisfaction to breeders and exhibitors to have some definite standard of excellence with regard to this most beautiful class of fowl. As a persevering and successful breeder of these, and these only, I am grieved to see judges awarding prizes to male birds full of white on the breast, thighs, and even in the tail. I am quite sure that pre-eminently successful breeder Mr. Cresswell must be sorry for this, though I am inclined to think he may have something to do with this alteration of the standard of excellence if I judge from the colour of some of his birds. The difficulty of breeding this class of fowl we all know, and Mr. Cresswell, I am glad to find, does not deny it. Now, to my mind, there ought to be an utter absence of any white in the breast, thighs, or tail. I have been successful in taking the first prize at the Crystal Palace and elsewhere with a bird entirely free from any white; but the third-prize bird at the Crystal Palace was full of white feathers. Now, I am aware that two Judges differ in their opinions of the standard of excellence to be required in these birds. I have now in my yard excellent birds according to this new standard, but I regard them as simply fit for the pot. I am sure we should all hail with gratitude a statement from three or four of the great Judges as to what they are determined shall be the qualifications necessary in these birds to make them prize-winners.—T. E. CARO, *Wye Vicarage, Kent*.

NORWICH POULTRY SHOW.

[THE following are extracts from notes furnished by the Judges to the reporters.]

Fanciers of poultry on the 11th had the opportunity of inspecting in the Corn Hall one of the largest and finest exhibitions of their pets ever held in the eastern counties; 447 birds were exhibited. All the arrangements for the Exhibition (for which the Corn Hall is well adapted) were admirable, as might have been expected from the great experience of the Manager, Mr. Groom, and his staff of able assistants.

There was a very good show of *Game* birds, but some of them were found when handled to have crooked breasts. A Black Red took the first prize for cocks, and also the extra prize for the best bird in the first four classes. The second-prize bird was a henney-feathered *Game* cock, a fine specimen of a breed seldom seen except in Cornwall or Devonshire, where it is common upon farms. These were the favourites of the cock-pit when cock-fighting was fashionable. In the class for *Game* hens or pullets a fine Brown Red took the first prize, a Black Red

the second; the latter was a finer bird, but it had a defect in carrying the tail over the back. There were some good birds in the classes for *Game* cocks and hens of any other variety. Buff *Cochin-China* cocks were strongly represented. A magnificent bird took the first prize in this class, and was also awarded the extra prize for being the best of the breed in the Show. The hens were only fairly represented. The prize bird is of grand symmetry. *Cochin-China* cocks of any other variety were a moderate class. They, however, included a remarkably beautiful White *Cochin*, that was deservedly awarded the first prize. *Cochin-China* hens of any other variety were also a moderate class. The *Brahma Pootras*, which came next, formed a notable feature in the Show. Dark *Brahma* cocks or cockerels were a well-represented class. The first prize in this class was taken by one of the grandest birds exhibited this season. The second-prize bird is a fine specimen, and after a lapse of time, with the bestowal of care, will take a very good bird to beat him. The class of Dark *Brahma* hens was considered the best class in the Show. Both the first and second-prize birds were fine specimens of the breed. The first-prize in the Light *Brahma* cock class was a magnificent bird, weighing 18 lbs., recently imported from America. Only the prize birds in the Light *Brahma* hen or pullet class were worthy of attention. *Dorkings* showed up strongly. Besides the prize birds in the class for *Dorking* cocks there were many meritorious specimens. The prize hen in the *Dorking* hen class was a beautiful bird, and has been previously placed in the position of a prizetaker. *Spanish* cocks and hens were moderately represented. Most of them were hardly enough up in the face. Gold or Silver-spangled *Hamburgh* cocks were a rather inferior class upon the whole, nor were there any good representatives of the breed in the class for hens. The class for Gold or Silver-pencilled cocks included some pretty birds. The classes for Any variety were both interesting and good. In the class for cocks a Silver *Poland*, a fine bird, took the cup, and a good specimen of the La Flèche variety the second prize. *Game Bantam* cocks were a moderate class—in fact, hardly any but the prize birds were fit for exhibition. In the *Game Bantam* hen class the prize bird was a Duckwing *Bantam*. This also took the extra prize for the best bird in the two classes of *Game Bantams*. *Bantam* cocks of any other variety were a class that contained many handsome birds. A Silver-laced *Sebright* took the first prize, and a Black the second. The hens were moderately represented.

There was one class for *Ducks*. The first prize went to Aylesbury, and the second to Rouen *Ducks*. Half a dozen Turkeys well represented that bird. They were considered to be as fine specimens as ever exhibited.

The names of the Judges and the list of awards were given last week.

BARRHEAD POULTRY SHOW.

The old *Scotch* breed was a very fair class. The *Spanish* class was excellent, the first and special prizes going to a very promising bird, which was also a winner at Kilmarnock. The birds shown in the *Dorking* class were all Silver-Greys with the exception of one pen, which were coloured. The Silver-Greys carried off the honours. The Black Red *Game* was well represented, the first and special prizes going to a very superior bird. The Duckwing *Game* was not nearly such a good class as we have seen at this Show. The Gold and Silver-spangled *Hamburghs* were a very good class, the special prize going to a Golden-spangled. The Gold and Silver-pencilled *Hamburghs* were two very fine classes, the special prize going to the Silver-pencilled, a bird that was nearly perfection. The *Brahma* class was very numerous and very good, the first-prize pen being greatly admired. The *Polands* (Topped) were something worth looking at. Both classes of *Bantams* were good, the first and special *Game Bantams* being those which took the first and special prizes at Larbert. In the class for Any other pure breed the first-prize pen was a great attraction.

The Aylesbury *Ducks* were pretty numerous, and the quality was quite up to the mark, the first-prize pen in this class gaining the special for the best pair of *Ducks* in the Show. This pen has been first at all the local shows it has been shown at. The second-prize pen was not far behind the first. The class for Any other variety of *Ducks* was not quite so numerous as we have seen them, but what were shown were of excellent quality. There was an English pen entered for this class, but too late for competition, as also a number of pens in other classes which only arrived after the decisions had been given, otherwise we believe a number of them would have been in the prize list.

We published the awards last week.

WOLVERHAMPTON ANNUAL POULTRY SHOW.—This Show has gradually increased in success year by year. Last year the total number of entries was 1159, an increase of 250 upon the Show of 1871. This year the amount of prizes is increased in all

ANY OTHER VARIETY.—1, H. Beldon. 2, Rev. W. E. B. Gunn. 3, A. Fodd. *hc* W. Smith; R. S. S. Woodgate; H. Beldon; J. Smart.
 TURKEYS.—1, Capt. M. Dougall. 2 and 3, Lord Kinnaird. *Poult.*—1, H. H. Stephenson. 2, Capt. M. Dougall. 3, D. Murray. *hc*, J. Mitchell.
 GESE.—1, Lord Kinnaird. 2, H. H. Stephenson. 3, H. Ogilvie.
 DUCKS (Aylesbury).—1, H. H. Stephenson. 2, A. Mackie. 3, H. White. *hc*, A. Burnett; Lord Kinnaird.
 DUCKS (Rouen).—1, Capt. M. Dougall. 2, Lieut.-Col. C. Rice. 3, A. Bowie. *hc*, A. B. Eason. H. H. Stephenson (2).
 DUCKS (Any other variety).—1, G. H. Nicholl. 2, H. H. Stephenson. 3, J. C. Jameson.
 SELLING CLASS.—1, I. J. Harrison. 2, J. W. Morrison. 3, A. Shepherd. *hc*, T. W. Mitchell; Mrs. J. Sinclair; T. Bellman; J. Selkirk; D. Gellatly; A. Shepherd; H. White; J. Henderson; P. Symon; J. Scott; A. Bowie; W. Smith; Lord Kinnaird (2).

NATIONAL PERISTERONIC SOCIETY'S SHOW.

THIS Society is a great institution of London in connection with the Pigeon fancy, and has hitherto confined its attention to a series of meetings during the winter season. The members bring their birds to these pleasant gatherings, and compare their merits and indulge in friendly criticism. Among the supporters are all the London judges of Pigeons. The Society thus offers to its young members the advantage of the advice of those whose great experience is acknowledged by their being called upon continually to arbitrate at our greatest shows, and who doubtless would confess that in imparting their knowledge to others they are simply paying back as a debt much of that knowledge which they have obtained through the medium of the National Peristeronic Society.

In connection with this Association a competitive Show has been organised, confined strictly to the members and the birds bred by the members during the year, and held at the Covent Garden Hotel on the 17th inst. It was largely patronised by the friends of the members and those interested in the charming pursuit of breeding these birds.

The prizes were of a nominal value, a small entry fee being paid by each exhibitor, which was divided proportionately between the prizewinners; and some friendly challenges were also made through the Association, which caused considerable excitement, and added much to the interest of the Exhibition.

Of course in an institution of this description, nothing but birds of the highest class would be expected, and few who visited the National Peristeronic Show on this occasion would leave disappointed, the birds fully maintaining the reputation of the Association. The Dragons were a grand class of birds; the Owls very beautiful, and the Jacobins and Barbs particularly good. Mr. Jones Percivall was elected to fill the very important position of Judge, Messrs. Esquilant and Tegetmeier exhibiting, and indulging their friends with a peep at a few of their grand studs of birds.

The arrangements were in every way satisfactory, and no commendation is too great for the Hon. Secretary, Mr. Jones, for his indefatigable exertions in making this Show so great a success.

CARRIER.—Black.—Cock.—1 and Sweepstake, M. Hedley. 2.—Heritage. *Hen*.—1.—Heritage. *Dun*.—Cock.—1, Col. Hassard. *Blue*.—Cock.—1, J. C. Ord. *Hen*.—1, J. C. Ord.
 BALDS OR BEARDS.—1, 2, and 3, W. Woodhouse.
 BARBS.—Black or *Dun*.—1 and Sweepstake, P. H. Jones. *Any other colour*.—1 and Sweepstake, P. H. Jones.
 DRAGONS.—Blue.—1 and Sweepstake, F. Esquilant. 2 and 3, J. South. *Silver*.—1 and Sweepstake, F. Graham. 2, J. South. 3, W. B. Tegetmeier. *Red or Yellow*.—1, F. Graham. 2 and 3, S. C. Betty. *Any other colour*.—1 and 3, —Greenfield. 2, F. Graham.
 OWLS.—English.—1 and 2, P. H. Jones. 3, F. Esquilant.
 FANTAILS.—1 and Sweepstake, A. A. Vander Meersch. 2, F. Esquilant.
 JACOBS.—Red or Yellow.—1 and Sweepstake, J. South. 2 and 3, A. A. Vander Meersch. *Any other colour*.—1 and 3, H. F. Alder. 2, E. E. M. Roids.
 TURBITS.—Blue or Silver.—1, P. H. Jones. 2 and 3, J. South. *Any other colour*.—1, F. Esquilant. 2, H. F. Alder. 3, W. E. Easton.
 MAGPIES, NUNS, SWALLOWS, OR SPOTS.—1, W. E. Easton (Nun). 2 and 3, P. H. Jones (Nun and Magpie).
 ANY OTHER VARIETY.—1, W. B. Tegetmeier (Pigmy Pouter).

CUMBERLAND AND NORTH OF ENGLAND POULTRY SHOW.—At this Show, to be held at Whitehaven on January 22nd-24th, the prizes are very good, three or four in each class, and in addition there are fifteen cups and plates varying in value from £5 to £2. There are prizes also for Canaries and Cats.

THE NORTH BRITISH COLUMBIAN SOCIETY'S COMING SHOW.

OUR friends at Glasgow are to have their Pigeon Show in their old quarters, the Drill Hall, on the 16th and 17th of January. This is well, for in 1870 and 1871 they had no show, and a Glasgow show is much missed. I have looked over the schedule of prizes; of course there are many for Pouters, because Pouters and Scotch fanciers are two united ideas, but other varieties are remembered as well, and liberally. There are seventeen silver cups; and as long as exhibitors so much prefer, as they seem to do, cups to money, so it is wise in committees to take care and provide these prizes. All committees may be warned by the falling-off at Birmingham not to fall into the like error, for it is not well surely for a show, in round numbers, of six hundred entries, to dwindle and shrink at once

to four hundred. Let, then, in future, all committees beware. At Glasgow the entries are to be in single birds, with two exceptions—viz., "Any other variety of fancy Pigeon not before specified;" and in the Selling class "Any variety, price not to exceed £5 per pair." In both these classes the birds are to be in pairs. I trust that the Show will be a success, for I wish that the good old North British Society should again come to the front after its temporary withdrawal, and show itself, as of yore, a first-class exhibition.—WILTSHIRE RECTOR.

BEE-FARMING IN 1872.

THIS season, like 1870 and 1871, has not on the whole been favourable for the bee-farmer. In the north of England there has been too much rain and too clouded a sky for our little honey-gatherers. In the spring and early summer months bees had to be fed pretty constantly. At the commencement of July the weather became more propitious, and continued so till the floods came about the middle of the month, when the hives began to lose weight very fast. The month of August this year was very favourable for honey-gathering, enabling the bees to fill their garner pretty full. During fifteen days of this month I had fifty hives of bees that gathered more than 1500 lbs. of pure speckless honey. While Squire Tollemache and party were knocking down and bagging more than one hundred grouse per day, the bees in the same locality were bagging and storing-up more than 100 lbs. of pure honey every day. Grand work this for our liliputian subjects and servants to accomplish! What will they not do when a good season comes?

My income from bee-farming this year is £95; expenses £28, profit £67. My object in presenting annually a balance-sheet of bee-culture is to quicken the attention of the rural population of England to the value of bees. The price of butter is so high that labouring men cannot buy it for their families. Honey is an excellent substitute, quite as healthy, and better liked by children. Well, around more than half the towns, villages and hamlets of England hundreds of tons of honey remain ungathered. Honey of an inferior quality is largely imported from foreign countries. When English gentry want good honey and honeysuckle they have to get them from Scotland and Ireland. An old aunt of the writer's, about eighty years of age, makes £10 a year (200 lbs. of honey) from four hives in ordinary seasons. What is done by this old Scotch lady might be done in thousands and tens of thousands of instances by the rural population of England. One thousand pounds weight of honey at least may be secured by a few working people in almost every hamlet and village of this country. When the working community open their eyes to this fact we shall probably have honey fairs in more towns than the solitary one of Wrexham.

My bees are of the common sort, which I much prefer to the Ligurians. The hives are made of straw—large, cheap and beautiful; and I consider it right to state, in the interests of bee-keeping and new beginners, that straw hives are very much better for bees and honey-gathering than wooden hives of any kind or construction.—A. PETTIGREW, Priory Vineyard, Sale, Manchester.

THE STEWARTON SYSTEM.

YOUR valued contributor, Mr. J. Lowe, graphically describes, at page 395, the wretchedly poor bee season of 1872 in Scotland; but I must take exception to the doctrine he there enunciates, that granting a good season and district, and strong hives, the results following are "equally good," whatever description of hive is employed, and that . . . "it is an old error to suppose that we can compel our little favourites to augment their sweets."

In a paper on foul brood so far back as No. 410, Mr. Lowe, on the same principle, was good enough to assume that the "mighty results" attained by the present writer were due to the "Canaan in which he dwells," such unfortunately being very far from the case. With the exception of an avenue of old limes, and a sprinkling of venerable planes, his camp is pitched in a comparatively desert land to such a bee-keeper's paradise as Carlisle, for instance, where, Mr. Pettigrew has told us, second swarms come up to 80 lbs., and prime ones to 168 lbs., 162 lbs., &c.; whereas in the days of my novice, when working exclusively on the old straw-hive swarming principle, 22 and 35 lbs. respectively were as good weights as I can recollect of. Ours being a continuous green cropping district is less favourable for bee-keeping than nearer the moors, in the less cultivated and older pasture neighbourhoods, where results used to be attained I had never hoped to emulate; but thanks to the Stewarton hive and the hybrid Italian bee, the secret of my success, I can now put the feats of former competitors pretty much into the shade.

I must own to a feeling somewhat akin to the humiliating stealing over me on perusing the confession from the pen of so advanced and excellent an apiarian as Mr. Lowe, that in these days of progress we had adopted a common hobby, so

utterly exhausted and effete, that the "bee-science of the age was inadequate for such a purpose." What purpose? "To compel our little favourites to augment their sweets." Compulsory education is inapplicable to bees; is it not their delectation so to do? The desiderata are increased facilities, not to compel, but aid them to "improve each shining hour."

We apiarians of the present day are not surely to act out the "rest and be thankful" spirit of that bee-keeper depicted on that piece of antique china on which my eye rests while I write, and who is stretched on a sloping bank sheltered by umbrageous trees from the sweltering heat of the noon-day sun, his hat, handkerchief, and cane by his side, an open book on his knee, while his spirit is supposed to be solaced by the sweet music emanating from a row of bee hives, all snugly enconced under the old orthodox straw hive and hackle. This picture of contentment had its charms for us in childish days, when we feasted our eyes between the sips of our "sweet content" from a grandmother's hand; but can there be no improvement on the old straw skep? The agricultural mind is said to be slow to move, is the apicultural slower still? With the "click, click" of the reaping machine in our ears, and reading of such feats performed through its intervention the last backward season, of whole fields of wheat cut upon the Saturday and safely secured in the barn-yard on the Monday, with our honey-harvest in superabundance too to reap, are we to "compel" our little favourites to subdivide into little bands and scatter over the harvest-field after the old rook fashion? Better far procure a "Stewarton" reaper, combine our forces, and "make honey while the sun shines."

We denizens of this watery west coast are generally supposed to know something of rain, but really the past season exceeded all former experiences. A jocular farmer friend assured me his very Ducks had got fairly tired of it, that he noticed regularly at every fresh downpour as his workers hied-off to the steading for shelter, so did the Ducks. We had intervals of fine weather, however, for a few days now and then.

Comparative results can be more fairly drawn from different systems wrought side by side than from one district contrasted with another. My apiary consists mainly of two descriptions of hives—the Stewarton for the production of honey, with a few common straw skeps furnished with imported Italian queens to supply first-cross princesses for my strong non-swarming colonies. In the beginning of July the weather dried-up for ten days or a fortnight; the inmates of the Stewartons at once took to their supers, and were busy storing the pure nectar from the white clover as quickly as the triple entrances to every colony would admit; while, on the other hand, the occupants of the straw skeps wrought in an inverse ratio of speed, gathering outside in ever-increasing masses, and appearing to the uninitiated as if they had joined the short-time movement, and were out on strike. Certainly their appearance did not justify the supposition that they were compelled to augment but rather to retard the collection of their sweets; but off came my first prime swarm at last, with a valuable as well as venerable Como queen at its head, imported by the late Mr. Woodbury, and, scorning the new nice roomy straw hive provided, rose high in the air, and embracing a favouring breeze, were soon lost to sight. It was nearly a month before I tracked my runaway yellow-jackets a mile or two over the hills "bee-line," to an old manse garden, where in the combs of a defunct colony they had, true to their instincts, augmented their store as well as population much more rapidly than they could have done at home.

Other swarms followed in abundance, but the autumnal examination in September showed that the honey collected by them had been chiefly absorbed in comb-building, and that they were all more or less light, having to be very liberally fed to preserve them from speedy starvation; whereas the strong non-swarming Stewarton colonies never required a particle of food, and yielded a couple of thoroughly sealed-out beautiful 20-lb. supers a-piece, in the third super a little honey, while the fourth contained only empty combs—most valuable, however, for the coming season. One of the above supers in particular was for straightness and massiveness of comb, with fineness of colour, the best it has ever been my good fortune to possess.

Having already transgressed too much on your space with these hurried remarks, I must reserve till another time further details of the superiority of the Stewarton system.—A RENFREWSHIRE BEE-KEEPER.

THE AMERICAN HONEY HARVEST.

ACCORDING to the census of 1850 there were produced in the United States and Territories 14,853,790 lbs. of beeswax and honey, while in 1860 there were 1,357,864 lbs. of beeswax, and 25,058,991 lbs. of honey, showing an increase of about 77½ per cent. Mr. Quinby, in his circular for 1872, states that Mr. Hildreth, of Herkimer, obtained in 1861 from thirteen hives 1500 lbs. of box honey, and doubled his original stocks. He also states that Mr. Underhill, of St. Johnsville, obtained from fifteen colonies six

swarms, 1050 lbs. of box honey, and over 600 lbs. of extracted honey. In his own apiary, he says, during the past year (1871), of those swarms that he took the trouble to weigh, one filled forty boxes weighing 5 lbs. each (200 lbs.); another thirty boxes. "From one we extracted 220 lbs. Very many others furnished as much more, but were not weighed." In 1870 one hive furnished 361 lbs. of extracted honey. The yield in one week, the last of June, was 83 lbs.—(*American Live Stock Journal*.)

OUR LETTER BOX.

N.B.—Owing to having to go to press two days earlier this week, we are under the necessity of omitting two or three Poultry Shows of which we have received reports and prize lists.

CHEPSTOW POULTRY SHOW (*E. C. Stretch*).—Give notice that you will sue in the County Court if the money you ask is not paid. The correspondence renders the Committee liable, and your claim is equitable.

SECRETARIES (*E. Terry*).—One lives at Wolverhampton, and the other at Northampton.

ROYAL DUBLIN SOCIETY'S SHOW.—Mr. W. G. Mulligan informs us that he had first prize for Light Brahma chickens and first for old Dark Brahmas.

FEEDING PIGEONS (*R. C. D.*).—Your loft seems suitable, and the two varieties, Fantails and Archangels, are a nice contrast. We are glad you can give your birds full liberty. As to feeding, go on as you do; feed the old ones liberally as now, out of the loft, and they will take care of their young. It is one pleasant thing connected with Pigeons, that, the old birds feeding the young ones, there is no trouble personally to the fancier with the latter.

FEATHER-ROT IN PIGEONS (*F. S.*).—We have ourselves never had a Pigeon cured, but they have gone on from bad to worse, though often breeding excellent-feathered young ones. We have known sheep ointment (blue with mercury) tried, and have seen cures advertised. Still, as the cause must be constitutional, the remedy ought to come from within. We believe it like wing disease—a form of scrofula, and a change of strain the best method to pursue.

SCARBOROUGH BIRD SHOW (*Fringilla canaria*).—We have no information on the subject, you had better apply to the Secretary.

CHELTEMHAM BIRD SHOW.—Mr. Watson denies that his bird's cap was trimmed. We can insert no letters on the subject; those who consider themselves injured must appeal to the Committee.

MOVING A HIVE, &c. (*B. S. H.*).—You cannot at any time move your bees a distance of 50 feet at once without subjecting them to much loss and injury. Wait until the spring, when the bees are vigorously on the wing, and then shift the hive gradually a foot or so at a time, allowing between each removal a clear day of good working weather to elapse. On the first occasion of taking the hive out of the bee-house, stand it exactly in front of its previous entrance, so that the bees may become accustomed to its appearance out of the shed; after which, shift to the right or left, and a little backwards or forwards as the case may require. By these precautions you will lose few if any bees, but by attempting to move the entire distance at once the loss of bee-life will be very great. We know of no effects that honeydew produces, except directly or indirectly to increase the prosperity of the bees.

COVENT GARDEN MARKET.—DECEMBER 23.

We are not in a position to report more favourably of the transactions here as an abundant supply of foreign goods amply compensates for the deficiency of our own produce, of which, however, the supply of Apples and Pears has by no means been so short as was represented by the growers. Upwards of two thousand barrels of American Apples were sold under the hammer during the past week. Hothouse Grapes and Pines are more than sufficient for the demand.

FRUIT.

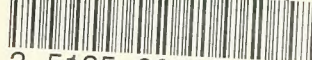
	s.	d.	s. d.		s.	d.	s. d.
Apples.....	1	0	0	Mulberries.....	1	0	0
Apricots.....	0	0	0	Nectarines.....	0	0	0
Cherries.....	0	0	0	Oranges.....	1	0	0
Chesnuts.....	12	0	0	Peaches.....	0	0	0
Currants.....	0	0	0	Pears, kitchen.....	0	0	0
Black.....	0	0	0	dessert.....	2	0	0
Figs.....	0	0	0	Pine Apples.....	1	0	0
Filberts.....	1	0	0	Plums.....	0	0	0
Gobs.....	1	0	0	Quinces.....	0	0	0
Gooseberries.....	0	0	0	Raspberries.....	1	0	0
Grapes, hothouse.....	1	0	0	Strawberries.....	1	0	0
Lemons.....	1	0	0	Walnuts.....	15	0	0
Melons.....	1	0	0	ditto.....	1	0	0

VEGETABLES.

	s.	d.	s. d.		s.	d.	s. d.
Artichokes.....	0	0	0	Mushrooms.....	0	0	0
Asparagus.....	0	0	0	Mustard & Cress, punnet	0	0	0
Beans, Kidney.....	0	0	0	Onions.....	0	0	0
Broad.....	0	0	0	Pickling.....	0	0	0
Beet, Red.....	0	0	0	Parsley per doz. bunches	2	0	0
Broccoli.....	0	0	0	Parsnips.....	0	0	0
Cabbage.....	0	0	0	Peas.....	0	0	0
Capiscums.....	0	0	0	Potatoes.....	0	0	0
Carrots.....	0	0	0	Kidney.....	0	0	0
Cauliflower.....	0	0	0	Round.....	0	0	0
Celery.....	0	0	0	Radishes.....	0	0	0
Coleworts.....	0	0	0	Rhubarb.....	0	0	0
Cucumbers.....	0	0	0	Salsify.....	0	0	0
Endive.....	0	0	0	Savoy.....	0	0	0
Fennel.....	0	0	0	Scorzoneria.....	0	0	0
Garlic.....	0	0	0	Sea-kale.....	0	0	0
Herbs.....	0	0	0	Shallots.....	0	0	0
Horseradish.....	0	0	0	Spinach.....	0	0	0
Leeks.....	0	0	0	Tomatoes.....	0	0	0
Lettuce.....	0	0	0	Turnips.....	0	0	0
				Vegetable Marrows.....	0	0	0



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